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ABSTRACT

Developed as a vehicle of communication for the Reading Recovery Council of North America, this journal represents an international effort to connect researchers, teachers, and all those interested in early literacy. Articles in the special inaugural issue on Reading Recovery are: "Reading Recovery: An Overview" (Stanley L. Swartz and Adria F. Klein); "An Inquiry-Based Model for Educating Teachers of Literacy" (Gay Su Pinnell); "The Role of Early Literacy Interventions in the Transformation of Educational Systems" (Janet S. Gaffney and Susan Y. Paynter); "Early Writing: Teachers and Children in Reading Recovery" (Diane E. DeFord); "Descubriendo la Lectura: An Early Intervention Literacy Program in Spanish" (Kathy Escamilla); "Descubriendo la Lectura: Un Programa en Espanol de Lecto-Escritura para las Primeras Etapas" (Kathy Escamilla); "Sustained Effects of Reading Recovery Intervention on the Cognitive Behaviors of Second Grade Children and the Perceptions of Their Teachers" (Billie J. Askew and Dianne F. Frasier); "Reading Recovery and Learning Disability: Issues, Challenges, and Implications" (Carol A. Lyons); "Reading Recovery: The Wider Implications of an Educational Innovation" (Marie Clay); and "Reading Recovery in New Zealand: A Report from the Office of Her Majesty's Chief Inspector of Schools." Articles in the second issue of the journal are: "Introduction to the Reading Recovery Council of North America" (Gay Su Pinnell); "The Role of Talk during Interactive Storybook Reading in a Kindergarten Classroom" (Andrea McCarrier); "Reading Recovery in England" (Angela Hobsbaum); "Learning to Read: Insights from Reading Recovery" (Noel K. Jones); "Factors Affecting Students' Progress in Reading: Key Findings from a Longitudinal Study" (Kenneth J. Rowe); "Reading Recovery: Una Vision General" (Stanley L. Swartz y Adria R. Klein); and "Errata: A Report from the Office of Her Majesty's Chief Inspector of Schools." (RS)

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Literacy, Teaching and Learning

An International Journal of Early Literacy

Special Inaugural Edition
Reading Recovery

Volume 1, Number 1
1994

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COMMENTARY

Any new effort usually is not new in the basic sense of the term. Much has gone before this new effort in planning, getting ready, and thinking through a wide range of options and concerns. This inaugural issue of *Literacy, Teaching and Learning* is a beginning, but has been carefully studied and planned for over a year and has involved many people from around the world giving generously of their time, talent, and expertise. So, it seems fitting to begin this new journal with a review of the rationale of the history of the efforts behind it and an overview of the plans for the immediate future.

The rationale for *Literacy, Teaching and Learning* was developed through more than one year's extensive discussion of the purpose and need for this journal. Many well-known researchers were consulted from a variety of disciplines, and editors of other major journals in literacy education were asked for their guidance. With this input, the Editors crafted the rationale statement that appears in this issue.

Literacy, Teaching and Learning was developed as a vehicle of communication for the new organization, the Reading Recovery Council of North America. This organization, planned in 1993 and officially begun in 1994, is an international effort to connect researchers, teachers, and all those interested in early literacy learning.

The inaugural edition of *Literacy, Teaching and Learning* is themed and contains articles on Reading Recovery, particularly focusing on current research. Articles by Gay Su Pinnell, Janet Gaffney and Susan Paynter, Diane DeFord, Kathy Escamilla, Billie Askew and Dianne Frazier, and Carol Lyons are included. Dr. Escamilla's article is also provided in Spanish. The Editors hope to include at least one professional article in each issue either written in Spanish and translated to English, or written in English and translated to Spanish. There are two reprints in this issue, one written by Marie Clay originally printed in Australia, and the other the United Kingdom report on Reading Recovery in New Zealand. Both reprints were difficult to obtain and are not widely available in North America. The Editors hope to provide such valuable reprints in each issue.

Thus, the shape of the first issue forecasts some regular features as well as having some unique elements. Regular issues will contain peer-reviewed research articles, an original Spanish language article whenever possible, difficult to obtain reprints from around the world, and reviews of professional books. Themed issues are not planned for the journal. This first issue is themed because it was believed that this issue had a special purpose coinciding with the launching of the Reading Recovery Council of North America. Publication is planned for twice a year for the first three years with plans for a quarterly journal thereafter.

Most importantly, *Literacy, Teaching and Learning* is being established as an international journal of early literacy. This is part of the full title of the journal and truly the intent of the effort. No other journal exists that focuses on this critical area. While *Literacy, Teaching and Learning*, linked to the efforts of the Reading Recovery Council of North America, grows out of the work in Reading Recovery, the journal is not meant to be defined in terms of Reading Recovery research. The editorial policy is provided inside the back cover of this issue.

Welcome to the special inaugural edition of *Literacy, Teaching and Learning, An International Journal of Early Literacy*, Volume 1, Number 1, Fall, 1994.

ADRIA F. KLEIN
STANLEY L. SWARTZ
Editors

READING RECOVERY: AN OVERVIEW

STANLEY L. SWARTZ and ADRIA F. KLEIN
California State University, San Bernardino

Reading Recovery is an early intervention program designed by Marie M. Clay (1979, 1985) to assist children in first grade who are having difficulty learning to read and write. Children eligible for the program are identified by their classroom teachers as the lowest in their class in reading acquisition. Children who are not taking on reading and writing through regular instruction receive a short-term, individually designed program of instruction that allows them to succeed before they enter a cycle of failure. Reading Recovery is designed to move children in a short time from the bottom of their class to the average, where they can profit from regular classroom instruction. The goal of Reading Recovery is accelerated learning. Children are expected to make faster than average progress so that they can catch up with other children in their class.

Reading Recovery provides one-to-one tutoring, five days per week, 30 minutes a day, by a specially trained teacher. The daily lessons during these 30 minute sessions consist of a variety of reading and writing experiences that are designed to help children develop their own effective strategies for literacy acquisition. Instruction continues until children can read at or above the class average and can continue to learn without later remedial help. Reading Recovery is supplemental to classroom instruction and lasts an average of 12-20 weeks, at the end of which children have developed a self-extending system that uses a variety of strategies to read increasingly difficult text and to independently write their own messages.

The Reading Recovery Lesson

Reading Recovery uses supportive conversations between teacher and child as the primary basis of instruction. This teacher-child talk has been found to be an effective method for experts (teachers) to help beginners (students) take on complex tasks (such as reading) (Cazden, 1988; Kelly, Klein, & Pinnell, 1994) and is a particular need of children having difficulty in school (Clay & Cazden, 1990). The Reading Recovery lesson follows a routine framework of activities that are individually designed based on a daily analysis of student progress by the teacher. Each lesson has seven distinct parts:

1. Child rereads several familiar books. These stories come from a variety of publishers and represent a wide range of narrative and expository texts of varying difficulty levels.
2. Child rereads a book introduced the lesson prior while teacher observes and records the child's reading behaviors.
3. Child does some letter identification and learning how words work.
4. Child writes a story with teacher providing opportunities for the child to hear and record sounds in words.
5. Child rearranges his or her story from a cut-up sentence strip provided by the teacher.
6. Teacher introduces a new book carefully selected for its learning opportunities.
7. Child reads the new book orchestrating his or her current problem-solving strategies.

Teacher Training

Reading Recovery uses a trainer of trainers model. University professors (trainers of teacher leaders) prepare district or county level teacher leaders (experienced staff developers) who in turn train teachers in the Reading Recovery teaching techniques. This model ensures that Reading Recovery will have the support at the school district and site levels necessary for successful program implementation. It also sets the stage for systemic reform of how we teach reading and writing and how we provide access to good first teaching for all children.

Experienced teachers are provided professional development in a yearlong curriculum that integrates theory and practice and is characterized by intensive interaction with colleagues. Teachers-in-training conduct lessons behind a one-way glass and are observed and given feedback by their colleagues. In addition, Reading Recovery teacher leaders visit teachers at their sites and help them reflect on and improve their teaching and observing of children. There are three main elements in the Reading Recovery professional development program:

1. Teachers and teacher leaders participate in an extensive training program that combines child development and early literacy theory with practice in the observation and discussion of Reading Recovery lessons that are taught behind a one-way glass.
2. Teachers and teacher leaders work with four children in Reading Recovery each day during their training year and in subsequent years. Teachers are observed and coached by teacher leaders during school visits.
3. Teachers and teacher leaders participate in ongoing professional development as long as they continue to teach in Reading Recovery. Teachers are visited and coached, and they participate in inservice training sessions where demonstrations are observed and critiqued using the one-way glass.

Terminology

Much of the research on Reading Recovery uses various terms that need further clarification and definition:

Observation Survey (Clay, 1979, 1985) contains six measures of a child's attempts on reading and writing tasks and provides information about what the child knows and can control in his or her learning. The components of the survey are:

1. *Letter Identification* - a list of 54 different characters including upper and lower case letters and the printed forms of *a* and *g*.
2. *Word Test* - a list of 20 words most frequently used in early reading materials.
3. *Concepts about Print* - a variety of tasks related to book reading and familiarity with books.
4. *Writing Vocabulary* - children are given an opportunity to write all of the words they know in ten minutes.
5. *Dictation Test* - a sentence is read to the child who writes the words using sound analysis.
6. *Text Reading Level* - a determination of reading level based on actual books organized by a gradient of difficulty.

Roaming around the known refers to the first two weeks of a child's program in which the teacher explores the child's known set of information and helps establish a working relationship, boost the child's confidence, and share some reading and writing opportunities.

Running records are a systematic notation system of the teacher's observations of the child's processing of new text.

Discontinued refers to the decision by the teacher to exit a child from the program based on the readministered Observation Survey scores and observations of the strategies used by the child during reading and writing, as well as reaching at least the average of the classroom performance in first grade.

Program children are those who received sixty or more lessons or who were successfully discontinued from the program prior to having received sixty lessons.

Continuing contact refers to inservice training provided after the initial training year.

Research on Reading Recovery

Reading Recovery has a rigorous research design that continuously monitors program results and provides support to participating teachers and institutions. Data are collected on all students who participate in the program. Findings of these studies include:

1. Approximately 75-85 percent of the lowest 20 percent of children served by Reading Recovery achieved reading and writing scores in the average range of their class and received no additional supplemental instruction (Pinnell, DeFord, & Lyons, 1988; National Diffusion Network, 1993; Swartz, Shook, & Hoffman, 1993).
2. The progress in reading and writing made by children in Reading Recovery is sustained and their performance in the average band has been measured up to three years after the children were discontinued from the program (Pinnell, 1989; Smith-Burke, Jaggar, & Ashdown, 1993).
3. Studies have shown Reading Recovery to be more effective in achieving short-term and sustained progress in reading and writing than other intervention programs, both one-to-one tutorial and small group methods (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994; Gregory, Earl, & O'Donoghue, 1993).
4. Reading Recovery has been found to be cost-effective when compared to remedial reading programs, special education placement, and primary grade retention (Dyer, 1992; Swartz, 1992).

Personal Reflection

Reading Recovery has a number of key elements that we believe make the program an important opportunity to reform how we teach young children to read and write. They are provided in summary form.

1. Reading Recovery is an early intervention program that supports early literacy. Reading Recovery focuses on early intervention, the benefits of which have been paid lip service for years. Spending the money early before problems begin rather than on later remedial programs or even on incarcerating criminals has been talked about but not seen in public schools. Reading Recovery is designed to concentrate resources on first graders as they begin to read.

Reading Recovery also supports accelerated learning. Most of our remedial programs consider themselves successful even when some progress is made. Unfortunately, children making only some progress will always be behind their class. Only acceleration can help a child catch up to the average of his peers and allow participation in the regular class program.

2. Reading Recovery serves the lowest achieving children. The lowest achieving children in first grade, without exception, are selected to receive the program. None of the historic reasons used to explain non-achievement (e. g., likely referral to special education, lack of parental support) are used to exclude children from the program.
3. Reading Recovery is effective with diverse populations. Data collected on program success from different geographical regions (throughout the United States, Australia, Canada, the United Kingdom, and New Zealand) and from various groups of children (those with ethnic, language, or economic differences) are comparable. Preliminary data from the more recently developed Descubriendo La Lectura/Reading Recovery in Spanish are also similar to children receiving the English program.
4. Children develop a self-extending system of learning to read and write. Children learn the skills to be independent learners who will just need the support of regular classroom instruction rather than remedial programs.
5. Student outcomes are sustained over time. Research on students after program completion has demonstrated continued growth in reading and writing without continued Reading Recovery support or other specific interventions.

6. Reading Recovery teachers serve children as part of their training. Teachers in the program learn by doing and use the Reading Recovery lesson framework throughout their training year. Students served by these teachers-in-training show comparable progress to those served by more experienced teachers.

7. Reading Recovery provides continuous professional support for teachers. The continuing contact for trained teachers is provided as long as the teacher participates in Reading Recovery. Unlike other teacher education programs which have little contact with students after the training period, Reading Recovery has ongoing inservice opportunities designed to maintain teaching effectiveness.

8. All Reading Recovery teachers, staff developers, and university professors work with children daily. This ongoing teaching of children by personnel at all levels is the practice that is generally credited with maintaining the effectiveness of the training. Professors can relate instruction in the university classroom to a recent event rather than something from the distant past. This novel aspect of Reading Recovery deserves serious examination by other teacher trainers.

9. Program success is directly tied to student performance. And by implication, success as a Reading Recovery teacher is related to student outcomes. Teachers are accountable for the amount of progress in reading and writing made by children in the program.

10. Reading Recovery is cost-effective. Though Reading Recovery is a supplemental program it remains cost-effective because of its short-term nature. Comparable programs (e. g., Chapter 1, special education) are much more expensive because they are typically long-term. Reading Recovery has been found to be both less expensive and more effective. Public school administrators still express concern about the expense of Reading Recovery. The best response is that the problem is a hard one and the solution will be just as hard. Educators have been searching in vain for cheap and easy answers for many years. A less expensive program that serves more children but has limited outcomes (or does not even attempt to measure outcomes) is no bargain.

11. Reading Recovery is a nonprofit program. Unlike a host of other programs offered to the public schools, Reading Recovery has no royalties, sells no materials, and makes no profits. The Reading Recovery name is trademarked only to protect the integrity of the program. This nonprofit status allows us to promote the program with impunity.

Those of us involved with Reading Recovery do so because its success with children has been continually demonstrated. Reading Recovery is a children-first-and-foremost view of the educational system. As such, the strength of its results with children, both short-term and long range, and its teacher professional development component provide avenues of much needed reform. To those truly interested in genuine school reform that provides access to good first teaching for all children, your careful review and consideration of Reading Recovery is recommended.

References

Cazden, C. B. (1988). *Classroom discourse: The language of teaching and learning*. Portsmouth, NH: Heinemann.

Clay, M. M. (1979; 1985). *The early detection of reading difficulties*. Auckland, NZ: Heinemann.

Clay, M. M., & Cazden, C. B. (1990). A Vygotskian interpretation of Reading Recovery tutoring. In L. Moll (Ed.), *Vygotsky and education: Instructional implications and applications of sociohistorical psychology* (pp. 206-222). Cambridge, UK: Cambridge University Press.

Dyer, P. C. (1992). Reading Recovery: A cost-effectiveness and educational outcomes analysis. *Spectrum: Journal of Research in Education, 10*(1), 110-119.

Gregory, D., Earl, L., & O'Donoghue, M. (1993). A study of Reading Recovery in Scarborough: 1990-1992. *Annual Site Report of the Scarborough School District*. Ontario: Scarborough School District.

Kelly, P. E., Klein, A. F., & Pinnell, G. S. (1994). Reading Recovery: Teaching through conversation. In D. F. Lancy (Ed.), *Children's emergent literacy*. Westport, CT: Praeger.

National Diffusion Network. (1993). *1992-93 discontinuation data* (Research rep.). Columbus: Reading Recovery National Data Evaluation Center.

Pinnell, G. S. (1989). Reading Recovery: Helping at-risk children learn to read. *The Elementary School Journal, 90*(2), 159-181.

Pinnell, G. S., DeFord, D. E., & Lyons, C. A. (1988). *Reading Recovery: Early intervention for at-risk first graders*. Arlington, VA: Educational Research Service.

Pinnell, G. S., Lyons, C. A., DeFord, D. E., Bryk, A. S., & Seltzer, M. (1994). Comparing instructional models for the literacy education of high-risk first graders. *Reading Research Quarterly, 29*(1), 9-38.

Smith-Burke, M. T., Jaggar, A., & Ashdown, J. (1993). *New York University Reading Recovery project: 1992 follow-up study of second graders* (Research rep.). New York: New York University.

Swartz, S. L. (1992). *Cost comparison of selected intervention programs in California*. San Bernardino: California State University.

Swartz, S. L., Shook, R. E., & Hoffman, B. M. (1993). *Reading Recovery in California. 1992-93 site report*. San Bernardino: California State University.

AN INQUIRY-BASED MODEL FOR EDUCATING TEACHERS OF LITERACY

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LITERACY,
TEACHING AND
LEARNING

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KNOWLEDGE IS CONSTRUCTED BY THE INDIVIDUAL WHO INVESTIGATES HIS OR her world. In the investigation of literacy, children discover many things for themselves. The evidence supporting self-discovery and constructive learning leaves teachers with important and practical questions. For example: What is my role as a teacher? What can I show and explain to the child without undermining independence? How do I support children's efforts to discover? Such questions are woven through daily teaching and are an element of daily learning on the part of teachers who hold a tentative theory of constructive learning.

Learning to teach has been described as the acquisition of a craft (Tom, 1984), an accumulation of generalizations derived from process-product research (Gage, 1985; Rosenshine & Furst, 1973), the learning of skills (Cruickshank & Metcalf, 1990), or acquiring a body of pedagogical knowledge (Shulman, 1987). Carter (1990) suggested that in addition to formal knowledge of content areas, teachers' knowledge includes information processing (the mental processes used to make decisions), practical knowledge (classroom situations and ways of addressing everyday problems), and pedagogical-content knowledge (ways of representing subject matter to students). Carter's analysis illustrated the complexity of learning to teach; different levels and types of knowledge are required.

Acknowledging the situational nature of teaching and the constructive nature of learning to teach raises dilemmas for teacher educators that parallel general questions about teaching children. What is the best way to assist teachers' learning? How much can be told, explained, transmitted, or demonstrated? What should teachers discover for themselves? Ultimately, a theory of teaching and learning must be reconstructed by every teacher. Duckworth (1986) suggested that the process of inquiry is a context within which the understandings related to teaching can be built. Reading Recovery, usually described as a tutoring program for children, also presents a unique preparation program that Alverman (1990) has described as inquiry oriented and that has been documented through research on student outcomes. This article draws together existing research on an inquiry-based teacher education model, Reading Recovery, and explores its implications for supporting teachers' work.

Background

To inquire is to ask questions or to investigate in search of truth. Inquiry can be applied to a scientist's systematically structured experiments or to exploring a nearby woods, because similar cognitive processes are usually involved (e. g., information gathering, analyzing, predicting, testing, reflecting, confirming, and interpreting). Often, inquirers talk over their hypotheses with others, using language communication to solidify ideas and generate new ones. Inherent in the process is learning. The inquirer who tests hypotheses and reflects on the results gains more than the accumulation of information and even more than learning the answer to a particular question. The act of investigation contributes to expansion and reformation of the original ideas; change in conceptual understandings—or learning—is the result.

Carter (1990) suggested that investigations go beyond what teachers learn to a consideration of what it means to learn to teach. It is evident that "teachers' knowledge is not highly abstract and propositional nor can it be formalized into a set of specific skills or preset answers to specific problems. Rather it is experiential, procedural, situational, and particularistic" (p. 307). Carter added that the teacher education process must provide opportunities for novices to practice problem-solving and develop new ways of thinking about problems.

Research in reading has focused on finding empirical links between student achievement and teacher actions. In a review of the literature, Tom and Valli (1990) pointed out the fallacies of formulating research-based rules for practice. These rules do not always apply within the complex environment of the classroom and do not provide teachers with the flexibility they need to make good judgments while teaching (Clark, 1988; Fenstermacher, 1982). Further, handing down rules dangerously oversimplifies the process of making teaching decisions and does not account for the on-the-spot decisions that teachers need to make. They proposed a view of craft knowledge, grounded in the wisdom of practice as a systematic way of knowing which methods of inquiry, rules of evidence, and forms of knowledge are inherent.

The National Council for Accreditation of Teacher Education (NCATE, 1987) recognized two kinds of knowledge: formal inquiry and theory-built knowledge based on connections to practice. These standards apply both to preservice and inservice teacher education. In this time of educational change, staff development for teachers has been considered by policymakers and administrators to be a key aspect of school reform. In a review of the research on staff development, Sparks and Loucks-Horsley (1990) identified five models: (1) individually guided staff development, in which teachers initiate and carry out their own learning activities; (2) observation/assessment, which involves teachers receiving feedback that can be reflected on and analyzed with the goal of improved student achievement; (3) development/improvement, acquisition of skill, or knowledge to address a particular problem or improve performance in a certain area; (4) training, workshops, or courses designed to impart effective teaching practices and help teachers change their behaviors; and (5) inquiry, which involves teachers in formulating questions about their practices and seeking answers to those questions.

Each approach, according to these authors, has its advantages. They cited evidence from research to support all five. The first approach recognized individual interests and motivations (Hering & Howey, 1982); the second has the advantage of specific observational data, transfer of skills to classroom practice, and ongoing support (Joyce & Showers, 1988). The development/improvement approach is often combined with training and has the advantage of offering specific ways to address problems or improve schooling. Advocates of the inquiry approach (Glatthorn, 1987; Glickman, 1986; Lieberman & Miller, 1986) said that research is an effective avenue through which teachers can develop new understandings. Like all researchers, as teachers formulate and seek answers to particular questions, other questions arise leading to a continual expansion of knowledge and applications to new settings and circumstances.

Sparks and Loucks-Horsley (1990) also suggested that while all models or combinations of approaches have potential for supporting teacher learning, they also all require a supportive organizational context to achieve success. Climate, leadership and support, policy adjustment, and participant involvement are all important factors. As staff development leads to change, the system must also change (Fullen, 1982). The evidence is compelling that organizational factors both affect and are affected by staff development processes, regardless of the model.

Although other models are gaining credibility and use, training is the most frequently used and researched model for staff development. The application of a single model, however, may not capture the complexity of human learning that exists among any group of teachers. Blended models that also give attention to organizational characteristics may have more promise for meeting the complex needs of education today, especially if staff development initiatives are measured not only by qualitative examination of teacher change but are linked to student change and learning.

Teacher Education in Reading Recovery

The key component and the delivery system for Reading Recovery is a staff development model that has some unusual features. The program for children is not a package of materials and step-by-step instructions for teachers. While the program involves teachers learning some specific procedures, these are considered to be a repertoire rather than a prescribed list of teacher actions (Clay, 1993b). Using the procedures means making decisions based on an analysis of the child's strengths and behavioral evidence of shifts in learning over time. Reading Recovery teachers see their own teaching as an opportunity to learn and extend that learning through observation and interaction with others.

The emphasis is on fast analysis; the live lesson goes by rapidly and cannot be retrieved. Teachers are required to concentrate and respond quickly during behind-the-glass sessions, an activity that sharpens their ability to observe and respond to children's behavior *on the run* while teaching. After the lesson there is time for reflection; the teachers work as a group to *get back to* critical moments in the two lessons observed. They reconstruct examples for each other and relate those examples to theoretical concepts they are building. They consult references, but essentially the process is one of social construction of knowledge. Occasionally, for a particular purpose, Reading Recovery teachers may view and analyze a videotaped lesson. However, nothing replaces the intensity of a live lesson.

In Reading Recovery teachers often say that they "learn to teach," but they could just as easily say that they "teach to learn." Each young student represents an individual investigation through which teachers learn as they follow the child's progress and make hypotheses about the nature of his or her learning. The teacher uses opportunities that arise from several sources:

- texts children encounter,
- their responses to those texts,
- the conversations in which they engage, and
- messages composed and written.

From those sources, teachers craft teachable moments; those powerful examples that will have the best chance of demonstrating processes to the child. A core concept is that each child constructs inner control of reading and writing processes by engaging in successful problem-solving while reading or writing extended texts. As they construct literacy, they connect it to their own lives.

Clay and Watson (1982), creators of the program in New Zealand, said, "The key word in the development and implementation of this inservice program was again observation and the unique feature was the potential for multilevel observation and learning that was embedded in the situation" (p. 192). They described an inservice session in which observing teachers were watching for evidence of the child's learning but were themselves being tutored by the leader. In this instance, the leader was being observed by a trainer who would later analyze the session. Thus, the situation represented layers of training. In one situation an observer could see individual guidance, observation/assessment, development/improvement, training, and inquiry.

Support System for Teacher Education

The model is implemented within a support system that is clearly specified from the beginning of implementation. The system includes the training and support of a teacher leader, the key staff developer in the program; the provision of a facility; university credit to support the course structure for teachers; and ongoing professional development for the initial training which takes an academic year, and subsequent years of participation for teachers. A site coordinator is appointed to provide administrative support for the program and to work with the teacher leader to solve problems related to program implementation.

Teacher leaders provide the initial class for teachers and continue to support trained teachers through individual visits and continuing contact sessions in subsequent years. Regional training sites at universities provide professional development for teachers and teacher leaders, including conferences and institutes. Program evaluation data is gathered to determine the progress of every child who participates in the program. These data also support program implementation by providing the information necessary to identify problems and enhance the quality of implementation.

First, teachers learn the observation procedures that they will use to identify children and assess their progress (Clay, 1993a). Then, they begin to learn a repertoire of procedures while simultaneously beginning to teach children. As they act, they reflect on their teaching in light of the observational data they are collecting daily from children. Learning is supported by the teacher leader through individual visits and coaching, but the key process is conversation among peers. Members of the teacher class take turns teaching an individual child behind a one-way glass screen while others in the group observe. They are guided by the teacher leader to state their observations and make inferences about the internal processing that behaviors might signal. This talking while observing process supports teachers' development of internal theories out of which instructional decisions are made.

The whole process takes time. At first, teachers may find the program overwhelming. They concentrate on the logistics of taking on and applying the procedures of teaching. As they participate in the experience and learn to drop their defenses with their peers, they begin to analyze not only children's behaviors but the teaching decisions and their potential impact on learning. After the observation, teachers gather for a reflective discussion with the demonstrating teachers.

These two components—talking while observing and the reflective discussion—make up the major part of the teacher education program. Each case example or demonstration presented gives every teacher a chance to reflect on his or her own teaching. This reflective/analytic experience helps teachers to construct and refine their theoretical explanations and to go beyond procedures. Through shared experiences, a culture is created in which teaching and learning are interwoven. Gaffney and Anderson (1991) provided a description of Reading Recovery as a two-tiered scaffolding model in which teaching and learning are congruent processes.

Research on the Effects of Reading Recovery Staff Development

A discussion of learning to teach in Reading Recovery must be foregrounded by talking about the nature of teaching. Lyons, Pinnell, and DeFord (1993) asserted that the training model as well as continuing contact among teachers are critical factors in assuring children's success. Reading Recovery emphasizes the role of the teacher as an informed, autonomous decision-maker who is responsible for creating a curriculum for each student. To provide opportunities for the development of independent readers and writers, the teacher must follow the student's thinking, recognize 'teachable moments,' and attend to the most memorable and powerful examples that will help learning to occur. The ability to understand and conceptualize learning and instruction at the cognitive and sociolinguistic levels takes reflection, practice, and time. Reflective opportunities, over time, with knowledgeable colleagues are inherent in the Reading Recovery training program and the system of support that surrounds teachers who participate. (Lyons, Pinnell, & DeFord, 1993)

The above statement is extended and illustrated by Elliott's (1994) study of one experienced Reading Recovery teacher who had a history of excellent results. For a period of one academic year Elliott followed this teacher's decision-making relative to two children. After each lesson the expert teacher engaged in stimulated recall to produce a think aloud protocol at regularly scheduled intervals throughout the year. Lessons were recorded by audiotape and videotape. The teacher's analysis of her decisions followed and were also recorded. Elliott described Reading Recovery teaching as a responsive process of which observation is the heart. She described the teacher as "looking for and noticing the *aha* and then acting on it" (p. 26). The process moves from observation to conscious awareness and transaction to decision-making to evaluation; but pedagogical reasoning underlies and permeates all elements. The teacher uses three knowledge sources: knowledge of child, pedagogical content knowledge, and knowledge of content in an integrated way during the reasoning process. Such descriptions are compelling evidence of the situational and dynamic nature of teaching in this individual setting, however, the complexity implies that learning to teach will be difficult.

Relationship to Student Outcomes

Evaluation of the effects of the program on students has been a priority in all implementations. A series of studies has documented the success of the Reading Recovery program for the young students served (Clay, 1990, 1993a; Kerslake, 1992; Pinnell, 1989; Lyons, Pinnell, & DeFord, 1993; HMSO Publications Centre, 1993). Program evaluation data from hundreds of implementation sites in five countries demonstrated the replicability of the positive outcomes for students. These studies, however, did not separate components of the program such as staff development, the teaching procedures, or the materials.

A statewide study (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994) followed a group of children for one year and compared four treatments:

1. Reading Recovery, the traditional Reading Recovery with the yearlong staff development program and observation using the one-way glass screen;
2. Reading Success, an adaptation that collapsed training into two weeks with ongoing support from an expert;
3. Reading/Writing Group, a group adaptation using traditionally trained Reading Recovery teachers; and
4. Direct Instruction Skills Plan, a skills tutoring approach.

The two treatments of interest here are Reading Recovery and Reading Success. Both treatments provided one-to-one tutoring using the same framework; however the training for teachers differed considerably, with inquiry components missing for the Reading Success teachers. Results of the study showed that the results of Reading Recovery were superior to all other treatments and that, in fact, the second most effective treatment was Reading/Writing Group, with traditionally trained Reading Recovery teachers. Quality of training emerged as the most powerful component related to student success. Results suggested that the yearlong training program with its unique features is highly related to student success and to the way teachers organize and conduct lessons.

Impact on Teachers as They Learn to Teach

Early in the United States' implementation, a yearlong qualitative study of one group of teachers revealed continuous shifts in their focus of attention throughout the training period (Pinnell & Woolsey, 1985). For a full year, the researchers transcribed informal discussions that occurred after the teacher class. An analysis of the oral language transcript revealed that at the beginning of their training, teachers tended to focus on the mechanics of teaching. They wanted to be told how to do it, how to use the procedures, and how to organize and use materials. They wanted the right answers from their trainers and were dissatisfied when specific answers were not forthcoming.

Gradually, the focus of descriptions shifted to descriptions and interpretations of children's behavior. They told stories about their teaching and members of the group got to know each other's students. They asked about children as individuals and followed their progress. As teachers gained teaching experience and participated in behind-the-glass sessions, they began to link their case-by-case knowledge into broader generalizations. This process took a long time; theoretical statements were not evident until near the end of the training year. Informal conversations with members of that teacher class indicated that even during a year's training, the learning was at a somewhat superficial level. Four years later, one member said:

> Looking back, it almost seems as though I knew so little that first year. I was learning a lot, but now we are going so much deeper into the processes. There are new understandings. I see much more when I observe behind-the-glass and participate in the discussion following the observation session. I think my teaching is getting better because I am noticing new things and understanding the reading process at a different level. (Personal interview with Ann James, 1992)

Geeke (1988) interviewed teachers while they participated in their first year of training. Geeke described the culture created in the Reading Recovery teacher class:

> The interview data show that most of the participating teachers had their existing beliefs shaken during the early inservice sessions. They were quickly persuaded that their current methods of teaching reading and writing were based on false assumptions about teaching and learning. Subsequently, on the basis of their observations of children and their

> experiences during the inservice sessions, they developed new beliefs about teaching and learning. This set of beliefs then acted as a framework into which the specific teaching practices of Reading Recovery could be placed . . . the teaching procedures were not given to the teachers as a set of 'ideas' for teaching literacy. Instead, the teachers were expected to use the procedures in a way that reflected the set of basic beliefs which were being developed at the same time. The ultimate aim of the training program seems to have been the development of a dynamic relationship between belief and practice, with belief acting as an individualizing influence on instruction. (p. 144)
>
> . . . it seems that real teacher change is unlikely to be achieved by simply introducing a 'new method of instruction' in some curriculum area. The new 'method' will only be really effective if teachers have thoroughly accepted the underlying principles of the program as well as its teaching practices. The techniques employed by Reading Recovery to achieve this result deserve close examination, especially as it appears to have been much more successful than usual in achieving teacher change in the group immediately involved. (p. 145)

Geeke (1988) also found that the inservice course had a profound impact on teachers' views. Like the U. S. teachers, Australian Reading Recovery teachers expressed discomfort with the intensity and demands of the inservice program, particularly the behind-the-glass experience; yet, they indicated that they strongly valued the experiences and the learning that occurred. Geeke identified six beliefs that teachers said they had developed from their involvement in Reading Recovery:

1. Effective learning depends on the child assuming responsibility for learning.
2. Effective learning is built on the child's current knowledge and skills, and depends on the child understanding what is expected of him or her.
3. Effective learning leads to an awareness of one's mental processes, self-monitoring of the cognitive strategies being employed, and the development of a self-correcting system.
4. Effective teaching depends on accurate observation and sensitive response, within a framework of coherent beliefs and effective practice.
5. Effective teaching depends on the quality of interaction with the child. In particular, it depends on astute questioning which shows the child how to solve his own learning problems.
6. Effective teaching depends on the teacher's understanding of the learning process, checked against the actuality of children's observable learning behaviors. Only if the teacher really knows how children learn will he or she be able to adapt teaching methods appropriately in response to the children's demonstrated needs. (p. 145)

Power and Sawkins (1991) described a first year implementation in another geographic area. The study affirmed the impact of the program as well as its intensity. Logistic concerns such as teaching loads and scheduling arose in teacher interviews. Teachers also expressed some frustration with the high expectations for independence. Here are two illustrative quotations from teacher interviews (Power & Sawkins):

> I don't know about anyone else . . . . I wish that I'd had a lot more answers or a lot more direction . . . . If I was doing something wrong to be just told straight out "look you did this, this was wrong, try this way." (p. 91)
>
> We were never given an answer you know. She used to say, 'there are no answers in Reading Recovery.' There are no answers. You were fed to the lions. You had to find it out for yourself. And that's what we did. We sat amongst ourselves and sussed it out for ourselves. But she put in all the information. The input was fantastic . . . . But she wouldn't feed it back so we simply had to find an answer. It was like being locked in. Until you found the key you couldn't get out. (p. 89)

In the same study, the tutor (teacher leader) commented:

> In a couple of instances I guess they would like me to answer their questions straight out rather than saying, 'Well, where could you go to find out about it?' 'What do you think?' 'Right . . . now what do you think about it?'. . . . And again these teachers have got to be

> thinking teachers. They've got to work through these things in their mind and I'm not always going to be beside them so it's that independence again. They have to know how to go about solving their own problems. (p. 90)

Power and Sawkins' results indicated that the group of teachers found the inservice sessions "intense," "exhausting," and "stressful," but they were positive about the amount of learning they were experiencing and the results that were showing for the children.

Pinnell, Lyons, DeFord, Bryk, and Seltzer's (1994), Geeke's (1988), and Power and Sawkins' (1991) studies focused on a first group of teachers in a country or region. Two other studies, also of first year training classes, examined language used by participants. Wilson (1988) studied the use of language in behind-the-glass and discussion sessions. Her results indicated that over the course of the year, teachers interacted more and were more likely to challenge each others' assertions. They also grew in their ability to describe specific behavior as evidence. She summarized her results as follows (Wilson, 1988):

> This study showed that as teachers are involved over time (1) in the articulation and interpretation of their observations of children and children's learning, and (2) in the integration of new perspectives into pedagogy, they do change in their ways of using language to describe these phenomena. These changes were in a positive direction, indicating a more supportive view of children, a less restrictive view of the reading process and reading instruction, and a higher percentage of high quality utterances with regard to emergent reading. (p. 160)

Rentel and Pinnell (1987) examined teacher participants' language in the discussion following the observation. They recorded discussions at two different points in time, one near the beginning of the training and one several months later. They categorized the language into claims or statements and then assessed the degree to which claims were grounded in evidence or supported by research. Results of this study indicated that from the first to the second observation, teacher participants produced significantly more grounded statements, indicating growth in the ability to support their statements with behavioral evidence.

Lyons (1992) studied six Reading Recovery teachers-in-training. The teachers collected and analyzed observation notes of student behavior, running records of oral reading, and writing samples to determine shifts in student learning. The teachers also used journals to record personal reflections about the effects of their teaching decisions on student learning, and they tape-recorded, analyzed, and evaluated their interactions (verbal and nonverbal) with students throughout the inservice course. The teachers and the researcher met weekly to analyze and evaluate the consequences of their instruction. Lyons' analysis of the audiotaped lessons and of teachers' personal reactions as documented in journals and conversations with colleagues suggested that as teachers became more sensitive to emerging behaviors signalling student change, they began to tailor their own behaviors to meet the students' developing abilities. The study suggested five general principles of learning and teaching (Lyons, 1992):

1. Assisted performance by an expert helps individuals—both students and teachers—expand and reorganize their understandings.

2. The language that surrounds events within a Reading Recovery lesson mediates performance and creates systems of change.

3. Conversation has an important role in teachers' learning; ongoing discussions provide a scaffold for the growth of understandings and a way to mediate performance by providing bridges between what the teacher already knows and what he or she needs to know to effectively teach.

4. The major shifts in teacher theory development are given impetus by learning the Reading Recovery teaching procedures and are greatly influenced by the inservice course. Lyons (1992) concluded that her study provided evidence that "learning is socially constructed, not only for children, but for adults as well" (p. 13).

The previous studies offer evidence that the initial training results in teacher change. As they are challenged to make their implicit ideas explicit, to examine them and to link them to practice, their theories typically shift. Program evaluation data, collected over the years on training classes, suggest a tendency for teachers to move from a skills orientation toward a more holistic view of literacy learning (The Ohio State University, 1993). More research is needed that follows teachers for longer periods of time, going beyond the initial training. It is possible that once the intensity of the training year wanes, teachers will find it difficult to sustain ongoing development of their understandings and concepts, learning will diminish, and old models that are pervasive in the school system may prevail. Little research has documented the role of continuing contact as it exists in the Reading Recovery network.

Only one study has followed teacher learning over several years. Lyons (1993) described one Reading Recovery teacher's developing knowledge of how to effectively teach beginning reading and explored the effects of this developing knowledge on the teacher's ability to plan and conceptualize teaching. Her observations, analyses of videotapes, and interviews over a three year period suggested that the teacher continued to grow over time in her understanding of how to prompt and ask questions that enabled a student to construct learning. Her approach to instruction became more skillful and complex throughout the investigation period. Lyons identified Phase 1 as trying out the prompts and questions suggested by Reading Recovery training, Phase 2 as using prompts and questions to test her hypotheses about the child's behavior and then to support the student's problem-solving, and Phase 3 as prompting and questioning in response to students' behaviors. The teacher moved from the first phase, in which by her own account she was "parroting questions according to the book" to the third phase when she demonstrated her ability to respond to unexpected answers, to reframe the situation, and to step out of her original perspective in order to recognize the student's perspective. Research is needed on larger numbers of teachers to define patterns and individual paths of growth and change. There is evidence that with system support and an inquiry approach, learning is continuous across time and at every level, as illustrated by this statement from a university professor. In an address to a group of teachers, DeFord (1991)talked about the continual learning process:

> When I first read, or attempted to read Clay's book, *The Patterning of Complex Behavior* (1979), I was immediately put off by the cognitive psychologist language and terms like *confusion*. Consequently, in 1980, I put this book away on my shelf. In 1985, I was asked to observe a Reading Recovery lesson at Ohio State University. I was fascinated as I observed the half-hour lesson, and by turns, brought up short by things I *didn't like*. I could see the child in front of me had made startling gains in both reading and writing, was happy, excited about books, and engaged in learning new things. When his teacher talked about his early reading and writing a different picture emerged, a child who was passive in new learning settings and who, the classroom teacher felt, would fail first grade. My curiosity overcame my initial discomfort with aspects of the program, and I became actively involved in learning about Reading Recovery. At first, the practices I agreed with were easy, and I tried to find ways around using the practices I disagreed with. But during the six years I have been teaching children in Reading Recovery, I have put my disagreements on hold to try to see the sense of particular practices with some children. Daily, I am forced to reconsider my beliefs in light of what I see children and teachers doing, but I have also continued to fill out my beliefs about early literacy learning. I had to take off my 'theoretical high heels,' so to speak, and replace them with walking shoes that are now quite comfortable. (p. 3)

An open-ended survey of 205 Reading Recovery teacher leaders revealed their perspectives on their own training and their role as teacher leaders (Pinnell, Lyons, Constable, & Jennings, 1994). The value of talk with colleagues emerged as a major factor in their learning. During the first year of training, they reported that reflection, dialogue, and the opportunity to articulate new understandings increased learning. The support of colleagues was valued by teacher leaders, especially after the training year. For these leaders, learning to teach is facilitated through talk with others who share their mission and vision.

The Potential of an Inquiry-Oriented System for Staff Development

Describing the opportunities for making implicit theories explicit both in the behind-the-glass talk and during individual school visits by a teacher leader, Alverman (1990) characterized Reading Recovery training as an inquiry-oriented model for teacher education. Inquiry-oriented is an apt description because all components of the staff development model involve teachers in searching and reflection. New Zealand teachers call this process sifting and sorting, referring to the sessions in which they work together to reflect on teaching, describe student behavior, and search for explanations and possible teacher responses. Teachers expect to engage in these sessions throughout their tenure in the program. Sifting and sorting implies that teachers hold a tentative theory; one that is incomplete. Their understandings are always under construction. A tentative stance and ongoing investigation are made possible through the strong content of the Reading Recovery lesson, the built-in research and evaluation, and the strong group support, all components that could be implemented in staff development or teacher education programs.

Records

Investigation takes place at every level of the Reading Recovery program. Data are systematically collected on scan sheets and reported by site and by state. But the investigation that pays off in teacher learning is undertaken by individuals. Teachers keep detailed records of students' progress which they use for analysis as they go. Anecdotal lesson records and running records of text reading are recorded daily and these documents provide a way for teachers to reflect on and analyze children's progress. The lesson notes include not only children's responses but teachers' prompts and questions so that the interaction between the two can be examined.

Running records provide another source of data for teacher investigation. It takes only a few minutes to record the child's reading behavior on a text that has been introduced and read once before. Over several days and weeks, the running records provide information to trace shifts in the student's processing; information that teachers find valuable in their decision-making with regard to individual students. Teachers also consolidate data on individual children in graphs and charts that help them become aware of progress. These records provide a visual profile of individual readers that feeds decision-making while teaching. To Reading Recovery teachers, knowledge of the child must be constantly updated and constantly available.

Dialogue with Colleagues

Analytic and reflective processes are supported by the weekly meetings of the initial training course and in subsequent years by the continuing contact sessions. In behind-the-glass sessions, teachers are freed from teaching. They have the opportunity to become observers, picking up details of behavior and quickly analyzing and interpreting it as they go. Teachers are encouraged to advance hypotheses as the lesson proceeds and to quickly gather evidence to confirm or disconfirm their assumptions and predictions. They have learned a language to talk together in the construction of knowledge.

The Role of Curiosity

Duckworth (1986) has identified two aspects to teaching:

> The first is to put students into contact with phenomena related to the area to be studied—the real thing not books or lectures about it—and to help them notice what is interesting; to engage them so they will continue to think and wonder about it. The second is to have the students try to explain the sense they are making and, instead of explaining things to students, to try to understand their sense. These two aspects are, of course

> interdependent: when people are engaged in the matter they try to explain it and in order to explain it they seek out more phenomena that will shed light on it. (p. 261-262)

Duckworth's comments illustrate a basic concept underlying teaching in Reading Recovery—teachers are curious about their students' learning. They are always trying to figure out what children are thinking about, how they see things, how they interpret teachers' comments and directions, and what is going on in their heads.

Support From the Teacher Leader

Analysis and reflection are supported in the one-to-one visits a teacher leader makes to both trained and in-training teachers. As teachers become more experienced they begin to assist each other through colleague visits. The interaction is different from the clinical supervision model described in the literature. Teacher leaders and teachers engage in analysis of the lesson viewed and investigate alternative explanations for student behavior and teacher response. Coaching is used and may be quite helpful especially when teachers are beginning their training; but visits primarily function to support the teacher's own thinking.

Although individual teachers engage in inquiry, the process and the learning that accompanies it is supported by the social group. Teachers depend heavily on interaction with their training class to extend their conceptual understandings. Each teacher is expected to contribute to the learning of others in the group and can, in turn, expect to receive assistance. Teacher leaders work to help the group ask questions of each other, challenge, and form chains of reasoning. Learning how to teach reading is a complex and demanding process, but it is made less so when the learning is shared.

Summary and Implications for Teacher Education

The Reading Recovery model provides: (a) an activity structure that builds strong content knowledge, (b) observation of phenomena important to participants and which they encounter daily in their work, (c) guidance from an expert, (d) daily work of an investigative nature, (e) careful records to guide investigation, (f) case examples for the group to consider, (g) a group of professional colleagues who work together over time, and (h) recognition of the central role of language in learning. Teachers who are at the same time learners construct a language to talk with each other about their work and to create a learning community. These characteristics of Reading Recovery could be the foundation of new models for educating and nurturing our nation's teachers.

References

Alverman, D. E. (1990). Reading teacher education. In W. R. Houston, M. Haberman, & J. Sikula (Eds.), *Handbook of research on teacher education: A project of the Association of Teacher Educators*. New York: Macmillan.

Carter, K. (1990). Teachers knowledge and learning to teach. In W. R. Houston, M. Haberman, & J. Sikula (Eds.), *Handbook of research on teacher education: A project of the Association of Teacher Educators*. New York: Macmillan.

Clark, C. M. (1988). Asking the right questions about teacher preparation: Contributions of research on teacher thinking. *Educational Researcher, 17*(2), 5-12.

Clay, M. M. (1979). *Reading: The patterning of complex behavior*. Auckland, NZ: Heinemann.

Clay, M. M. (1990). The Reading Recovery programme, 1984-88: Coverage, outcomes and education board district figures. *New Zealand Journal of Educational Studies, 25*, 61-70.

Clay, M. M. (1993a). *An observation survey of early literacy achievement*. Portsmouth, NH: Heinemann.

Clay, M. M. (1993b). *Reading Recovery: A guidebook for teachers in training*. Auckland, NZ: Heinemann.

Clay, M. M., & Watson, B. (1982). An inservice program for Reading Recovery teachers. In M. M. Clay (Ed.), *Observing young readers: Selected papers*. Exeter, NH: Heinemann.

Cruickshank, D. R., & Metcalf, K. K. (1990). Training within teacher preparation. In W. R. Houston, M. Haberman, & J. Sikula (Eds.), *Handbook of research on teacher education: A project of the Association of Teacher Educators*. New York: Macmillan.

DeFord, D. E. (1991. Fall). Reading Recovery teachers as lifelong learners. *The Running Record, 8*(1), 3.

Duckworth, E. (1986). Teaching as research. *Harvard Educational Review, 56*, 481-495.

Elliott, C. (1994). *Pedagocial reasoning: Understanding teacher decision-making in the cognitive apprenticeship setting*. Unpublished doctoral dissertation, Texas Woman's University, Denton.

Fenstermacher, G. D. (1982). On learning to teach effectively from research on teacher effectiveness. *Journal of Classroom Interaction, 17*(2). Reprinted from C. Denham & A. Liebermann (Eds.) (1980). *Time to learn* (pp. 147-168). Sacramento: California Commission for Teacher Education and Licensing.

Fullen, M. (1982). *The meaning of educational change*. Toronto: OISE Press.

Gage, N. (1985). *Hard gains in the soft sciences: The case of pedagogy*. Bloomington, IN: Phi Delta Kappa.

Gaffney, J. S., & Anderson, R. C. (1991). Two-tiered scaffolding: Congruent processes of teaching and learning. In E. H. Hiebert (Ed.), *Literacy for a diverse society: Perspectives, programs, and policy*. New York: Teachers College Press.

Geeke, P. (1988). *Evaluation report on the Reading Recovery field trial in Central Victoria, 1984*. Australia: Centre for Studies in Literacy, University of Wollongong.

Glatthorn, A. (1987). Cooperative professional development: Peer-centered options for teacher growth. *Educational Leadership, 45*(3), 31-35.

Glickman, C. (1986). Developing teacher thought. *Journal of Staff Development, 7*(1), 6-21.

Hering, W., & Howey, K. (1982). *Research in, on, and by teachers' centers* (Occasional Paper No. 10). San Francisco: Teachers' Center Exchange, Far West Laboratory for Educational Research and Development.

HMSO Publications Centre. (1993). *Reading Recovery in New Zealand: A report from the office of Her Majesty's Chief Inspector of Schools*. London: Author.

Joyce, B., & Showers, B. (1988). *Student achievement through staff development*. New York: Longman.

Kerslake, J. (1992). *A summary of the 1991 data on Reading Recovery, Research and Statistics Division Bulletin* (No. 5). Ministry of Education, Wellington, New Zealand.

Lieberman, A., & Miller, L. (1986). School improvement: Themes and variations. In A. Lieberman (Ed.), *Rethinking school improvement: Research, craft, and concept*. New York: Teachers College Press.

Lyons, C. A. (1992). *Reading Recovery teachers learning to teach effectively through following*. Paper presented at the meeting of the National Reading Conference, San Antonio, TX.

Lyons, C. A. (1993). The use of questions in the teaching of high risk beginning readers: A profile of a developing Reading Recovery teacher. *Reading and Writing Quarterly, 9*, 317-327.

Lyons, C. A., Pinnell, G. S., & DeFord, D. E. (1993). *Partners in learning: Teachers and children in Reading Recovery*. New York: Teachers College Press.

National Council for Accreditation of Teacher Education. (1987). *NCATE standards, procedures, and policies for the accreditation of professional education units: The accreditation of professional education units for the preparation of professional school personnel at basic and advanced levels*. Washington, DC: Author.

The Ohio State University. (1993). *The executive summary: 1984 to 1993, Reading Recovery*. Columbus: Author. (Available from Reading Recovery program, The Ohio State University, Ramseyer 200 — 29 W. Woodruff, Columbus, OH 43210.)

Pinnell, G. S. (1989). Reading Recovery: Helping at-risk children learn to read. *The Elementary School Journal, 90*(2), 159-181.

Pinnell, G. S., Lyons, C. A., Constable, S., & Jennings, J. (1994). *The voices of literacy leaders: A survey of Reading Recovery teacher leaders.* Presentation to the National Reading Recovery Teacher Leader Institute, Columbus, OH.

Pinnell, G. S., Lyons, C. A., DeFord, D. E., Bryk, A., & Seltzer, M. (1994). Comparing instructional models for the literacy education of high-risk first graders. *Reading Research Quarterly, 29,* 9-39.

Pinnell, G. S., & Woolsey, D. (1985). *Report of a study of teacher researchers in a program to prevent reading failure* (Report to the Research Foundation of the National Council of Teachers of English). Urbana, IL: NCTE Press.

Power, J., & Sawkins, S. (1991). *Changing lives: Report of the implementation of the Reading Recovery program on the North Coast, NSW.* Northern Rivers: University of New England.

Rentel, V. M., & Pinnell, G. S. (1987). *A study of practical reasoning in Reading Recovery instruction.* Paper presented at the meeting of the National Reading Conference, St. Petersburg Beach, FL.

Rosenshine, B., & Furst, N. (1973). The use of direct observation to study teaching. In R. M. W. Travers (Ed.), *Second handbook of research on teaching.* Chicago: Rand McNally.

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*(1), 1-21.

Sparks, D., & Loucks-Horsley, S. (1990). Models of staff development. In W. R. Houston, M. Haberman, & J. Sikula (Eds.), *Handbook of research on teacher education: A project of the Association of Teacher Educators.* New York: Macmillan.

Tom, A. R. (1984). *Teaching as an oral craft.* New York: Longman.

Tom, A. R., & Valli, L. (1990). Professional knowledge for teachers. In W. R. Houston, M. Haberman, & J. Sikula, (Eds.), *Handbook of research on teacher education: A project of the Association of Teacher Educators.* New York: Macmillan.

Wilson, V. (1988). *A study of teacher development in an interactive inservice setting.* Unpublished doctoral dissertation, The Ohio State University, Columbus.

THE ROLE OF EARLY LITERACY INTERVENTIONS IN THE TRANSFORMATION OF EDUCATIONAL SYSTEMS

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LITERACY INTERVENTIONS, ESPECIALLY THOSE THAT ARE SUCCESSFUL IN bringing students to high levels of literacy, cannot be considered isolated phenomena in schools. The promise of an intervention is that it seeks to impact existing conditions in such a dramatic way as to change the subsequent course of events. Whereas conventional instruction is designed to provide continuous service with no goal for accelerated achievement, a literacy intervention is designed to produce accelerated change, moving student achievement rapidly and providing for sustained performance over time by the participants. Interventions are change agents within educational systems extending the principles of change into the existing host structures. Implementing an intervention is a worthwhile but complicated undertaking and the complexity of the endeavor reflects the magnitude of change required of the individuals responsible for implementation.

It is an important paradox that change must be conceived at the level of a system, but change can only be achieved at the level of the individual's performance. "In saying that change occurs at the individual level, it should be recognized that organizational changes are often necessary to provide supportive or stimulating conditions to foster change in practice" (Fullan, 1991, p. 46). A planned approach to the network of structures that promote or constrain the change process is needed within each system (Clay, 1993b; Dalin, 1978; Fullan & Miles, 1992). Thus, adopting a complex intervention is a problem-solving process that requires understanding of the conceptual congruity of all aspects of the theory, intervention, and training underlying the innovation.

For an innovation to be incorporated into a system effectively, the parts of the innovation must be externally congruent and cohesive with the host system (Clay, 1993b). The type of complex change that actually acts as a catalyst for accelerated progress of students and changes their sustained performance requires more effort than simple or superficial change and must be accompanied by ways of addressing this complexity. In this article, we explore some of the elements within Reading Recovery, an early literacy intervention, that address the complexity of implementation and the accompanying structures that support meaningful change.

Change Within Systems

Structures That Foster Sustained Teaching Success

Perhaps the changes in a teacher's knowledge, skills, and behaviors that must be sustained over time best exemplify the complexity of transforming a system. It is at this level for an individual teacher that change does or does not occur. One prominent literacy intervention, Reading Recovery, is based on a theory of reading acquisition that acknowledges the complexity of learning how to read and write continuous text (Clay, 1990) and a comparable professional development model that acknowledges the complexity of teaching children how to read and write, especially children who are experiencing the greatest difficulty getting underway. Just as reading is a problem-solving activity, so is teaching reading a problem-solving activity. One way that Reading Recovery meets the demands of complex change for teachers and learners is through a three-tiered staffing scheme in which trainers of teacher leaders (university level) prepare teacher leaders (district-wide leaders) who in turn conduct extended professional development for teachers (school-based instructors).

The delivery of an intervention demands that teachers be trained to teach in such a way that the lowest achieving children may produce accelerated rates of progress. This is a new and very complex skill for teachers; even highly capable teachers have to learn how to deliver effective literacy intervention instruction. The magnitude of a teacher's personal effort, reflection, and action that are associated with constructing, deconstructing, and reconstructing one's knowledge and beliefs about how children learn and specifically about how children learn to read and to write cannot be minimized. While many educational efforts are evaluated on the basis of either teaching performance or student performance, the success of the Reading Recovery intervention is measured by rigorously evaluating both teaching and learning—not just one or the other.

The yearlong, professional development model of Reading Recovery reflects the challenge of preparing high-craft teachers who are able to achieve this goal. In Reading Recovery, teachers improve their teaching as well as children's learning (Clay, 1991, p. 69).

The process of changing one's teaching behaviors can be overwhelming. Even very good teachers may be overcome by the expectation that they need to do more than they are already doing. This expectation comes from the basic assumption that more time, more activities, more evaluation, more . . . is better. Reading Recovery and teaching for acceleration is not about teaching harder or doing more; it is about teaching differently. The origins of successful progress lie in the teacher-student interactions. When teachers observe changes in the reading and writing behaviors of children that they are certain have been fostered by changes in their teaching, they assume personal and individual responsibility for the results with these children. The teacher perceives a direct relationship between her decisions and the performance of the student and becomes the owner of the job of teaching. The teacher's response is not "this is a good program," but "I can teach anyone to read." This deep ownership of a reform comes through learning, not before (Fullan & Miles, 1992, p. 749).

Leadership Structures for Addressing Complexity

"Change initiatives do not run themselves" (Fullan & Miles, 1992, p. 751). By stating the obvious, Fullan and Miles pointed out the need to manage the adoption and institutionalization of interventions promoting substantive change. They described school improvement as a problem rich process and argued that effective facilitators "embrace problems rather than avoid them" (p. 750). The complexity of Reading Recovery and the challenge of implementation in the context of each school creates openings for communication with a wide array of educators who enter the process with diverse interpretations. Teacher leaders are deliberately tutored in leadership roles during their initial training and are encouraged to accept differing views about the program as opportunities for education (Clay, 1991). The simultaneous roles of the teacher leader as teacher of children, teacher of teachers, and program implementor enable the leader to communicate with various audiences about the rationales underlying the program. The teacher leader learns to be receptive to the issues and concerns raised by colleagues, interprets them in light of the rationales, and participates in joint problem-solving. In responding to these various constituencies, the teacher leader gradually builds a network of informed colleagues with shared understanding to assist in the continuing effort to promote accelerated change.

The teacher leader is described by Clay (1993b) as fulfilling the role of Goodlad's (1977) redirecting system that preserves the integrity of the innovation from alterations that lead to conformity with previous and ineffective conventional practices. Fullan (1990) described the tendency of an existing host system to make an innovation look more familiar and conventional as a way of simplifying the concept or down-sizing the scale due to the initial challenges of implementation. Smoothing the rough edges may actually sandpaper the project to death. Simple projects have smaller problems and although start-up problems may be eliminated by reduction and oversimplification, the effects of the project are often modest and result in a trivial enterprise (Huberman & Miles, 1984). Supported by these researchers is the truth of the ancient Talmud, "For a great goal every hardship is trivial, for a trivial goal every hardship is great."

Structures for Leading Consensus-Building Communication

Within each system, teachers and administrators construct a set of shared assumptions about their work. These "normative agreements are at the heart of the school enterprise" (Rosenholtz, 1989, p. 30). Change is the result of the transformation of these normative agreements that emanate from communication among school personnel. Clear statements about significant goals remain imperative for engaging others in the change process, but Fullan (1991) cautioned that clarity at the outset helps, but does not eliminate problems. "Each and every individual who is necessary for effective implementation will experience some concerns about the meaning of new practices, goals, beliefs, and means of implementation" (p. 45). The role of the Reading Recovery community (teacher, teacher leader, and site coordinator) is to promote communication about what is important and what is possible in terms of student achievement among other educators and community leaders. The skill required to lead such consensus shifting dialogue is the result of the substantial training, extended modeling, and personal transformation experienced by Reading Recovery personnel.

A particular challenge to most school personnel when implementing a literacy intervention is to choose not to participate in a "conspiracy of tolerance" (Rosenholtz, 1989, p. 175) in which educators tacitly agree that there will always be a group of children for whom reading and writing at average levels is unattainable. A shift of this normative agreement comes only after the experience of seeing children unexpectedly excel frequently enough to question the conventional consensus model. The layers of experience and communication that lead to such a shift are all steps toward a new consensus.

The results of Rosenholtz's (1989) study of teachers' workplaces indicated that in schools with a high consensus regarding shared goals, teacher talk is predominately about the substance of teaching and student learning, whereas in schools with moderate or low consensus about instructional goals, teachers' talk revolves around student conduct. The function of an informed literacy team within the system is to engage in conversations which help to build a new consensus regarding the universal nature of literacy and the possibility of intervention methods to effectively support and sustain achievement. The new consensus is a shift from a conspiracy of tolerance to a promise of success.

Consensus and shared meaning are developed and reshaped through waves of communication. One teacher leader described this process as requiring many opportunities for dialogue over time to promote the focus of resources and commitment from administrators, teachers, parents, school board members, and community leaders toward the changing agenda of early literacy success for all children.

Dissemination and Expansion

The Necessity of Networks for Intervention Models

One significant and essential element of systemic change resulting from intervention is the reality of strong networks beyond any single site. An educational intervention, by definition, serves a specific population that is embedded within the general enterprise of schools and is compatible with this enterprise but not central to it (Clay, 1993b). Interventions can provide the system with a potency for change that must be protected even as the intervention begins to affect the rest of the system. The presence of a strong network of support for the broader concepts of an intervention (e. g., the power of intervention to change achievement and literacy for all children) help to build assurances of quality during initial adoption that can then be maintained in subsequent implementations. Without the network of support, quality can wane under the greater weight of conventional practice.

Another essential element for quality is the expectation that the intervention will be structured to work over time. Short-term expectations can impede the change structures of an intervention. "Local educators experience most school reforms as fads" (Fullan & Miles, 1992, p. 747). Adoption of an innovation does not automatically lead to implementation. The fad mentality feeds into decisions to adopt innovations without planning for their maintenance because there is an underlying assumption that the program will not survive. The short-term pattern can result from a number of factors. Administrators and school board members may be attracted to the availability of incentive grants but not be committed to the goals of a selected project (Bernard van Leer Foundation, 1991). Often district leaders want to be perceived as innovative but concern themselves more with associating with symbols of reform rather than its substance (Fullan &

Miles, 1992). Initial adoptions may be subject to erosion due to staff mobility, budgetary problems, changing priorities, or other factors. A network of support and common implementation experiences can raise the problem-solving conversation of any given site by adding weight and practical options in an effort to meet local obstacles and setbacks.

Planning for Expansion

There is an evolving emphasis in the dissemination process in the United States which is supporting the importance of long-term change as a result of collaborative implementation procedures. The Department of Education (Farquar, 1993) outlined a new approach to nationwide dissemination reflecting the influences of systemic-change theories, school-culture research, and a constructivist view of learning. There is new attention to the processes needed to move beyond simple short-term adoption of an innovation to the more desirable endeavor of "institutionalizing change, that is, building and sustaining over time, practices and structures that promote comprehensive school improvement" (Farquar, 1993, p. 2).

Implementation moves into institutionalization as the project evolves in response to the tremendous forces brought to bear on any initial adoption by the unique characteristics of the new host system. This transition is a significant part of the dissemination and implementation process. The community of learners involved in implementation seeks to offer alternatives, actively engage users, and provide them with opportunities to fit innovations to the local setting. The implementation of Reading Recovery in more than 1200 sites has reflected these trends and has been a process of constructing communication networks, analyzing priorities of the host system, and intentionally nurturing the feelings of success for all those involved. The variety of implementation models used for Reading Recovery throughout the United States reflects the flexibility on the part of Reading Recovery providers and implementors to accommodate and maximize the existing vital efforts of the host systems through the complementary acquisition of the innovation (Paynter, 1994).

Significant national educational reform can be shaped by intervention efforts when those efforts represent an intentionally designed structure that not only allows for but promotes wide-scale expansion. "Unless a project can disseminate its ideas and start having an impact on a large scale, it remains a costly experiment, affecting only the lives of a few people" (Bernard van Leer Foundation, 1991, p. 1). For development to be successful, this change of scale must be accomplished while preserving the integrity of the project without sacrificing quality. One prevalent assumption is that if a project is successful, replications will be automatic. Anyone involved in project development and dissemination understands that this is a myth. "Dissemination is not something that a project can do *on the side*" (Bernard van Leer Foundation, 1991, p. 4). The Reading Recovery model uses the role of the university training center as an unconventional but highly effective dissemination network. The three-tiered staffing model in Reading Recovery creates formal and informal collegial networks between and among various implementation sites and the regional university centers.

The strength of a network to help secure adequate financial and personnel support to develop large-scale expansion cannot be overstated. Worthwhile change—substantial and important change—takes effort. Dissemination is a means to change, and like change, dissemination is a process, not an event. The dissemination process needs to be outlined in the initial development of a project so that structures can be incorporated that will increase the likelihood of successful replications.

Some important considerations are essential to wide-scale expansion of a successful project that can promote comprehensive school improvement. The original project must be determined to be stable and the providers need a broad vision of the project that extends beyond their own local site. Fullan and Miles (1992) reiterated that all large-scale change is implemented locally and that no blueprints for change exist. Change is a journey, they suggested, guided by experts who are clear about the purpose, limitations, pitfalls of the innovation, and the rationales underlying quality assurances.

Time between adoption and implementation is needed to attend to matters of quality. Often the time between adoption and implementation is so minimal that adequate preparation has not transpired. In case studies of twelve districts, Huberman and Miles (1984) found that the shorter the time between adoption and implementation, the more problematic the implementation. "The more complex the change, the more work there is to do on quality" (Fullan, 1991, p. 72).

One aspect of the Reading Recovery network that lends stability to the project as it expands is the constructive nature of the ongoing professional development that promotes continual discourse regarding quality and consistency among a large number of continually expanding project sites. Without ongoing inservice for teachers, the results and therefore the continuation of the project may be jeopardized. The continuing contact of teachers through participation in four to six inservice sessions, which include observation and evaluation of the teaching of colleagues, represents the sustained assistance required for refinement of teaching expertise of high-craft Reading Recovery teachers and for responding to changes within schools.

The Role of the Provider in the Dissemination Process

For every innovation, a provider guides potential implementors through the decisions that they will use to construct their project. The role of the provider is to nurture additional extensions without allowing new sites to become dependent on the initial provider. The provider functions as a bridge builder for the project to other situations and geographical areas. At the same time, the provider retains a certain detachment in order to promote independent problem-solving by the new local site and prevent overwhelming demands on the existing projects (Bernard van Leer Foundation, 1991). Louis and Miles (1990) reported that strong assistance is needed to support local reform including at least thirty days of external assistance annually that is sustained over several years. If adequate resources are not allocated to support a long-term comprehensive implementation plan, the quality is threatened. If providers attempt to rescue local efforts, they may risk the life of the original project or other local project implementations. "Reform fails unless we can demonstrate that pockets of success add up to new structures and school cultures that press for continuous improvement" (Fullan & Miles, 1992, p. 748).

Adoption and continuation are influenced by the degree that the effects of a successful intervention are visible to others. Reading Recovery provides feedback to all participants from the beginning and although there is stress related to being visible in a formative stage, the very visibility of the intervention supports its role as a systemic change agent. Clay (1993a) reported that children are the first to experience success after only a few weeks, followed by parental responses soon thereafter. Classroom teachers notice positive changes at about eight weeks followed by administrators and finally, researchers.

As a provider, Reading Recovery has structured central data and information centers to support expansion efforts. Reading Recovery has a system of quality assurances built into the adoption process that outlines implementation in calibrated stages. Comprehensive annual reports of each Reading Recovery site include data on the progress of all children served at the site and the accomplishments of the teachers and teacher leaders. Results of questionnaires completed by parents, central administrators, principals, classroom teachers, and Reading Recovery teachers are reported. As a National Diffusion Network project, data for all children served by Reading Recovery within the United States are collected and consolidated, site by site, state by state. The documentation of the results of the intervention is a significant factor contributing to the continuation of Reading Recovery and its visibility.

To create opportunities for children to undergo breakthroughs in literacy learning, effective interventions must thrive and contribute to the transformation of their host systems beyond the intervention itself. Change can only happen at the level of the individual; one child, one teacher, one administrator at a time. The role of interventions, embedded in host systems that provide substantial change for the most needy individuals in the system, is an essential role toward the transformation of American education.

Stakeholders in the education of children must make informed choices about the use of limited financial and personnel resources. Clarity regarding the goals and benefits of an intervention will assist educators in selecting only options that have the greatest leverage for impact on all levels of their system and making the best use of a child's learning time (Clay, 1993a). Making an informed decision to implement a powerful intervention may not only transform the system but alter the way the participants in that system view the system, themselves, and others (Bernard van Leer Foundation, 1991) and challenge beliefs about change and the rate at which change is possible.

References

Bernard van Leer Foundation. (1991, April). Dissemination. *Bernard van Leer Foundation Newsletter, 62*, 1-11.

Clay, M. M. (1990, September). *The challenge of the 1990s: International literacy decade.* Invitational address to the 17th New Zealand Reading Association Conference, Palmerston North.

Clay, M. M. (1991). Reading Recovery surprises. In D. E. DeFord, C. A. Lyons, & G. S. Pinnell (Eds.), *Bridges to literacy: Learning from Reading Recovery* (pp. 55-74). Portsmouth, NH: Heinemann.

Clay, M.·M. (1993a). *Reading Recovery: A guidebook for teachers in training.* Portsmouth, NH: Heinemann.

Clay, M. M. (1993b). Reading Recovery: The wider implications of an educational innovation. In A. Watson & A. Badenhop (Eds.), *Prevention of reading failure* (pp. 22-47). New York: Ashton Scholastic.

Dalin, P. (1978). *Limits to educational change.* New York: St. Martin's Press.

Farquar, E. (1993, November). *A new approach to nationwide dissemination.* Paper presented at the National Dissemination Association, Phoenix, AZ.

Fullan, M. G. (1990). Staff development, innovation, and institutional development. In B. Joyce (Ed.), *Changing school culture through staff development* (pp. 3-25). Alexandria, VA: Association for Supervision and Curriculum Development.

Fullan, M. G. (1991). *The new meaning of educational change.* New York: Teachers College Press.

Fullan, M. G., & Miles, M. B. (1992). Getting reform right: What works and what doesn't. *Phi Delta Kappan, 7*, 744-752.

Goodlad, J. I. (1977). *Networking and educational improvement: Reflections on a strategy.* Washington, DC: NIE.

Huberman, M., & Miles, M. (1984). *Innovation up close.* New York: Plenum.

Louis, K. S., & Miles, M. B. (1990). *Improving the urban high school: What works and why.* New York: Teachers College Press.

Paynter, S. Y. (1994). Implementing innovation: Integrity and flexibility. *Network News, 6*(2), 6-7.

Rosenholtz, S. J. (1989). *Teachers' workplace: The social organization of schools.* New York: Longman.

EARLY WRITING:
TEACHERS AND CHILDREN IN READING RECOVERY

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LITERACY,
TEACHING AND
LEARNING

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WHEN A CHILD FIRST ATTEMPTS TO COMMUNICATE AND TO ACT UPON HIS OR her world, the child embarks upon a lifelong journey upon a literacy highway. Is there a destination at the end of the journey? Probably not. For the child is merely learning to communicate, learning about culture, and how to use the adult, or others, to help make sense of the world (Clay, 1991, p. 26). The centrality of language, culture, and meaning to this ongoing endeavor is illustrated best by Halliday (1975) when he stated that language learning involves the construction of social systems, or an interpretative model of the environment and reality. This occurs as the learner learns language, learns through language, and learns about language within complex communicative acts.

As Rogoff (1990) discussed children's cognitive development, she drew the analogy of an apprenticeship. She characterized this apprenticeship as occurring through guided participation in social activities with companions who support and stretch the learner's understanding of and skill in using the tools of culture. Speech, action, and symbols (reading, writing, and mathematics) are tools for learning in our literate world. The most significant moment in the course of intellectual development was described by Vygotsky (1978) as occurring "when speech and practical activity, two previously completely independent lines of development, converge" (p. 24).

Vygotsky (1978) discussed children's speech and action as helping to attain goals. "Children not only speak about what they are doing; their speech and action are part of one and the same complex psychological function, directed toward the solution of the problem at hand" (p. 25). He found that the more complex the task, the more important talk was. "Sometimes speech becomes of such vital importance that, if not permitted to use it, young children cannot accomplish the given task" (p. 26). These two observations led him to conclude that "children solve practical tasks with the help of their speech, as well as their eyes and hands" (p. 26). He posed a unified theory of learning that involves perception, speech, and action that is unique to human behavior.

In this constructive view of the child as literacy learner, the development of literacy and language are intertwined with purposeful action and problem-solving. As a young child learns to read and write, the first goal is learning itself; to communicate as other adults do through written language. "When language splits from an exclusively verbal stream to form a written branch as well, certain profound changes occur in the relationship between speaking and thinking" (Tharp & Gallimore, 1988, p. 104).

The majority of children make the transition from verbal interactions into written interactions within the context provided by formal schooling. Schooling, as suggested by Vygotsky's theory (in Tharp & Gallimore, 1988) "frees the symbol systems of reading, writing, mathematics and science for use as tools, thus allowing forms of thinking different from those of everyday life" (p. 108). Schooled language requires that the child manipulate language and the products of written language in *decontextualized* ways, emphasizing sign-sign relationships over sign-object relationships (Wertsch, 1985). This shift in the child's attention is what sets schooling apart from literacy or language-learning events in the home and community. As Tharp and Gallimore (1988) argued, "the instructional task of the school is to facilitate that developmental process by teaching the schooled language of reading and writing, and facilitating the constant conjunction of these systems with those of every day concepts" (p. 108). The practical activity of the first few years of school for the young child is understanding the symbolic acts of reading and writing, their purposes, interrelationships, and uses in the contexts of school and the world at large.

The purpose of this article is to explore the evolution of writing and its relationship to reading and teaching with first grade children who have been identified as being within the lowest twenty percent of their class at the beginning of the school year. Specifically, through a detailed analysis of videotaped lessons, teacher records, and student writing samples, writing progress and teacher decisions will be described within an instructional program offered to these children in Reading Recovery. The children and teachers were part of a larger study (Lyons, Pinnell, & DeFord, 1993) of early literacy interventions. The children were selected as those making the highest and lowest progress in Reading Recovery. It is hoped that the examination of children just learning about written language will offer insights into two areas: (a) the conjunction of reading and writing, or the reciprocal nature of writing and reading; and (b) the nature of effective teacher decisions that support children's literacy learning in Reading Recovery.

The Research Context on Initial Reading and Writing

In a review of research into reading and writing connections (Irwin & Doyle, 1992), the first research was documented as early as 1929 with most of the research conducted on the relationships between reading and writing occurring between 1970 and the present. While some of the research is interdisciplinary (psychology, linguistics, rhetoric, or foreign language), the majority of studies were published in the field of education. Within the body of research on reading/writing connections, some key insights about the nature of reading and writing and shared knowledge structures within the two processes are evident.

Both reading and writing involve subroutines, or subprocesses (Irwin & Doyle, 1992), as well as networks of related information (Clay, 1991). Knowledge of the subroutines, such as letter formation, directionality, planning, and phonological relationships, and the overarching ability of putting the subroutines into fluent action in reading and writing are influenced by attention and memory (LaBerge & Samuels, 1974), task demands, and processing demands (Bruner, 1974). Readers and writers operate on many levels simultaneously, on information that is organized on serial order principles (print), and those that are organized on hierarchical levels (discourse, sentences, words). Learning how to attend to and act upon serial order information while maintaining simultaneous hierarchical processing can create difficulties for the emergent reader and writer (Clay, 1991).

Bruner (1974), in describing how an infant orchestrates separate activities into controlled, sequenced movement, outlined six stages that involve feedback, intention, repetition, and modification in the development of subroutines and skilled performance. In terms of reading and writing, the intention to use the process in a meaningful way, purposes, monitoring the processes in action, searching for useful information, rehearsal strategies, and self-correction have all been discussed as important to the outcomes of both reading and writing (Butler & Turbill, 1984; Clay, 1991; Dyson, 1989; Goodman & Goodman, 1979; Harste, Woodward, & Burke, 1984).

The proficient reader uses knowledge about the topic at hand, the linguistic system, and the symbol system, and uses these cues to establish expectations and to monitor the reading process and comprehend messages. The proficient writer brings the same knowledge base to writing, and utilizes these sources of information for specific purposes to form meaningful messages for others and self. In characterizing the strategies used by good readers and writers during the process, common terms such as searching, predicting, rereading, redrafting, and revising, monitoring, and rethinking are used (Butler & Turbill, 1984; Clay, 1991; Goodman & Goodman, 1979).

One consistent finding is that better writers tend to be better readers and that better readers tend to produce more syntactically complex writing than poorer readers (Stotsky, 1983). The texts that make up the reader's and writer's worlds, whether from the classroom or experiences in other settings, also have an influence on their writing, in both form and content (DeFord, 1986; Eckhoff, 1983; Spivey & King, 1989).

One area that has received a great deal of attention across reading and writing research is the child's development of phonological awareness (Goswami & Bryant, 1990; Perfetti, Beck, Bell, & Hughes, 1987; Read, 1986; Rohl & Tunmer, 1988). The phonological skill that children bring to both reading and writing is the ability to divide a word into its onset and its rime, and also to categorize words which have the same onset or the same rime. With very little instruction, children quickly learn to associate onsets and rimes with strings of letters, making inferences about new words on these bases (Goswami & Bryant, 1990). In fact, Read (1986) found that young children invented spellings which revealed that they were attending to phonological features that adults no longer distinguish. He further suggested that adults may be influenced by their greater knowledge of spelling conventions, and therefore may not notice some features the young child is still exploring. In the examples of children's invented spellings of *chrac* for the word truck or *aschray* for ashtray, the adult knows that while they articulate a sound similar to *ch* at the beginning of the word *truck*, their knowledge of the spelling convention of *tr* overrides their attention to the sounds they are actually making. Children, however, are more dependent on the sounds they articulate because they have not begun to develop a system of grapheme to phoneme matches. There is little evidence, however, children use grapheme-phoneme information when they begin to read (Goswami & Bryant, 1990). Rather, the research would suggest that children begin to adopt a phonemic code through writing, and eventually apply this knowledge to their reading. So, the research would suggest that there is an initial discrepancy or separation between children's reading and writing in terms of phonological development (Goswami & Bryant, 1990). This would explain why young children can read some words which they cannot write and also write some words they cannot read.

In studies of children who are just learning about writing, Scardamalia and Bereiter (1982) found that so little of their writing process is automatic and they have difficulty maintaining idea generation with other aspects of the process such as executive routines and print conventions, that they may not be able to engage in sustained, independent writing events. In one study of 6- to 8-year-olds from low income families, McLane (1990) found that children in an after school program were unable to sustain writing when teachers who were knowledgeable about the writing process were not present. However, in guided settings, such as the instructional context of Reading Recovery, observations of what the child writes "is a rough indicator of what he is attending to in print, and demonstrates the programmes of action he is using for word production" (Clay, 1991, p. 109).

The transition into the world of written language offers some unique opportunities for analysis of the reading/writing connection, as well as some particular difficulties. Writing slows down the child's processing so that the observer can more easily describe actions and possible links made during reading and writing. The texts the reader is engaged with are relatively simple. Consequently, it is a point in time when it may be easier to describe what the child is attending to and how thoughts, actions, and new learning become integrated. However, as Clay indicated (1991):

> . . . at this time, it is well to remember that writing is only a rough guide to what the child's visual analysis skills are because he may well be able to see what his hand is not able to execute. On the other hand, in reading what he says is often a very misleading guide to what his eye is really perceiving. What he says is, at this time, more likely to be driven by his language experiences, what he has heard and what he typically produces. (p. 109)

In order to carefully describe young children's emergence into the use of written language, Clay (1991, 1993a) recommended a longitudinal research strategy based on individual progress across standard tasks to limit the possibility of error or being misled by our observations. This is in keeping with recommendations of Irwin and Doyle (1992) who suggested, "It is important to consider the way individuals interact with the environment in which their abilities develop" (p. 9). Toward this end, this article examines the progress of twelve young literacy learners within daily writing lessons in Reading Recovery across their instructional program.

The Research Context on Teaching in Initial Literacy

The constructivist perspective reflected in the descriptions of children's literacy learning requires a concomitant view of teaching: as knowledge is constructed through social interaction, teaching is the active assistance and guidance of learning processes within socially dynamic activity settings. A metaphor commonly used to describe teaching within this framework is one of a scaffold (Wood, Bruner, & Ross, 1976). This temporary, adjustable scaffold as a metaphor suggests that the teacher enters into joint participation in activity settings to allow the child the greatest level of independent action. Cazden (1988) described the interaction as "a very special kind of scaffold that self-destructs gradually as the need lessens and the child's competence grows" (p. 104). The teacher structures the instructional setting so that the learner grows into increasingly more complex actions.

A key point related to the nature of the activity setting is that the tasks established for learning within this instructional context are not simplified; the difficulty of the task is held constant while the role of the child is varied (Greenfield, 1984). While the dominant use of the term scaffolding "suggests that the principle variations in adult actions are matters of quantity, how high the scaffold stands, how many levels it supports, how long it is kept in place" (Tharp & Gallimore, 1988, p. 34), many adult actions are also qualitatively different. "Sometimes, the adult directs attention. At other times, the adult holds important information in memory. At still other times, the adult offers simple encouragement" (Griffin & Cole, 1984, p. 47).

This form of teaching has also been termed an instructional conversation. Behind this term is a belief that through the conscious use of dialogue by the teacher, students will internalize the dialogue and gradually assume control of the processes involved within the activity setting (Irwin & Doyle, 1992). This is a perspective strongly influenced by Vygotsky (1978) wherein the learner progresses from interpersonal functioning (guided through social interactions) into an intrapersonal functioning (guided by self) through a series of transformations. Speech forms the link within these interactions, so that the conversations, the guiding comments, the questions, the demonstrations, and actions that were all part of the interpersonal interactions become internalized into the self-regulating speech within the learner. The learner, as Wertsch (1979) indicated:

> . . . has taken over the rules and responsibilities of both participants in the language game. These responsibilities were formerly divided between the adult and child, but they have now been taken over completely by the child. The definitions of situation and the patterns of activity which formerly allowed the child to participate in the problem-solving effort on the interpsychological plane now allow him/her to carry out the task on the intrapsychological plane. (p. 18)

This social-constructivist perspective emphasizes both the child's personal construction of literacy and the activeness of adults within the joint activity in contributing to that learning (Cochran-Smith, 1984; Heath, 1983; Wells, 1986; Pinnell, 1989). Clay and Cazden (1990) stated that "as children engage in reading and writing, they are working with theories of the world and theories about written language, testing them and changing them" (p. 207). Within the context of reading and writing instruction the teacher observes, assesses the nature of the child's current level of operation, offers encouragement, asks questions, and provides necessary guidance. The scaffold that assists the learner in this setting changes continually in terms of support, but always at the cutting edge of the child's competencies (Clay & Cazden, 1990). The cutting edge as defined by Clay and Cazden is compared to Vygotsky's (1978) term, the zone of proximal development, the difference between the child's ability to solve problems independently and with adult guidance or in collaboration with more capable peers.

As noted by Clay and Cazden (1990), the term scaffold was never used by Vygotsky, but it has come to be used to describe the interactional support, often in the form of adult-child dialogue, that maximizes the growth of the individual child's independent functioning. "For one child, the Reading Recovery program as a whole is such a scaffold" (Clay & Cazden, 1990, p. 219). The definition of instruction that emerges from this brief review suggests that teaching involves "adult guidance that takes into account the nature of what a child knows, the problem-solving processes used, and an understanding of what needs to be learned in order to strive for the potentials available to the child" (Lyons, Pinnell, & DeFord, 1993, p. 132). Research conducted by Lyons (1993) suggested that teachers involved in the yearlong instructional program in Reading Recovery articulated six key understandings about teaching they had learned as a result of their interactions with children. They learned how to:

1. Become astute observers of student behaviors,
2. Follow the student,

3. Assist students' performance through clear demonstrations and use of explicit language,
4. Question effectively or prompt students based on available information,
5. Observe behaviors to make informed decisions, and
6. Examine the student's way of making sense (Lyons, Pinnell, & DeFord, 1993, pp. 149-162).

In the one-to-one tutorials in Reading Recovery, the teacher guides the child though reading and writing activities that include the reading of familiar materials, a running record of yesterday's new book, writing, and a new book introduction and first reading. Across these lesson components, the teacher prompts, questions, offers information when necessary, and provides demonstrations based upon the observations made of the student's actions and responses. The writing portion is placed within this lesson to facilitate the child's attention to print in a different way from that which must occur in reading. Yet, many of the operations needed in reading are practiced in another form in writing. Writing is a resource for reading and vice versa (Clay, 1985):

> Children's written texts are a good source of information about a child's visual discrimination of print for as the child learns to print words, hand and eye support and supplement each other to organize the first visual discriminations. When writing a message, the child must be able to analyze the word he hears or says and to find some way to record the sounds he hears as letters. (p. 35)

The writing component is surrounded by reading so that the child has the greatest opportunity to create important conceptual links between reading and writing (Lyons, Pinnell, & DeFord, 1993). The teacher and the child work together to generate a topic, then construct the message together with the teacher writing only what the child is unable to write to facilitate pacing of the ten-minute segment (an approximate time). The teacher observes how the child operates, making notes on the lesson record about the child's contributions, important signs in the child's development, and approximations made. This lesson record also includes instructional techniques utilized such as words taken to fluency, new instances of known written vocabulary that might emerge, known words that might be used to help the child problem-solve on new words, and what words were used for Elkonin (1973) boxes, a technique adapted in Reading Recovery to facilitate hearing sounds in words (Clay, 1985). The research study described focused on the interactions that occurred during this component of the Reading Recovery lesson.

The Research Study

The current study involved a subset of teachers who participated in a statewide study of early literacy initiatives in Ohio (Lyons, Pinnell, & DeFord, 1993; Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994). The original sample of randomly assigned children consisted of 238 male and 165 female students taught by 40 teachers. A series of outcome measures were administered pre and posttreatment. These assessment instruments were also administered to an in-school control group. Each treatment was then compared to its control group, providing a comparison of how each treatment compared with the school's traditional compensatory program. Out of this pool, teachers ($n = 4$) whose children consistently achieved higher and lower outcomes in Reading Recovery were selected for further study. Out of a possible 16 students (four for each teacher), complete instructional records were obtained for 12 students. Pre and posttest Observation Survey (Clay, 1993b) scores can be found in Tables 1 and 2 for the Letter Identification, Word Identification, Concepts about Print (CAP), Writing Vocabulary, Dictation, and Text Reading tasks for each of the students available for study of writing development and teacher decision-making. These data are presented with stanine comparisons, including where the score falls in relation to a normal curve distribution of nine equal intervals.

While all but five of the children scored within stanines one and two on the Observation Survey at the beginning of their instructional program, there was a trend in text reading scores for the lower outcome students to score up to the third stanine. Three students in both groups achieved in the third or fourth stanine on the Concepts about Print task, indicating stronger book handling abilities at the beginning of first grade. Otherwise, the students were fairly well matched at entry to the program.

At the end of the program, the higher outcome students scored in the eighth and ninth stanines, except for three students who scored in the sixth stanine and two students who scored in the seventh stanine (see Table 1). These scores were well above average across the tasks of the Observation Survey. There was one student in the lower outcome group who matched these scores (see Table 2). The other six students in this group scored between the first through the sixth stanines, while two students scored in the seventh stanine on selected tasks. The most marked areas of concern for these students was in the area of text reading. The majority of lower outcome students scored at or below the fifth stanine at the end of their program as compared to the eighth and ninth stanines for the higher outcome students.

Table 1
Entry and Exit Scores with Stanine Data for Higher Outcome Students

		Observation Survey											
Teacher	Student	Letter Identification/ **Stanine**		Word Test/ **Stanine**		CAP/ **Stanine**		Writing Vocabulary/ **Stanine**		Dictation/ **Stanine**		Text Reading/ **Stanine**	
						Entry Scores							
1	1	46	**1**	2	**1**	12	**2**	5	**1**	7	**1**	A	**1**
	2	48	**2**	1	**1**	15	**4**	4	**1**	7	**1**	1	**1**
	3	49	**2**	0	**1**	6	**1**	4	**1**	12	**1**	A	**1**
	4	47	**2**	0	**1**	10	**1**	2	**1**	1	**1**	A	**1**
2	5	47	**2**	0	**1**	15	**4**	6	**1**	11	**1**	A	**1**
						Exit Scores							
1	1	53	**6**	20	**9**	22	**9**	40	**8**	35	**8**	18	**8**
	2	53	**6**	20	**9**	23	**9**	54	**9**	37	**9**	30	**9**
	3	53	**6**	20	**9**	20	**8**	54	**9**	33	**7**	18	**8**
	4	54	**8**	19	**9**	21	**9**	50	**9**	34	**7**	16	**8**
2	5	54	**8**	20	**9**	23	**9**	63	**9**	37	**9**	22	**9**

Table 2

Entry and Exit Scores and Stanine Data for Lower Outcome Students

		Observation Survey											
Teacher	Student	Letter Identification/ **Stanine**		Word Test/ **Stanine**		CAP/ **Stanine**		Writing Vocabulary/ **Stanine**		Dictation/ **Stanine**		Text Reading/ **Stanine**	
						Entry Scores							
3	6	22	**1**	0	**1**	6	**1**	3	**1**	3	**1**	A	**1**
	7	47	**2**	0	**1**	11	**2**	4	**1**	11	**1**	2	**2**
	8	8	**1**	0	**1**	11	**2**	1	**1**	2	**1**	A	**1**
4	9	49	**2**	3	**1**	6	**1**	1	**1**	6	**1**	A	**1**
	10	47	**2**	2	**1**	12	**2**	8	**2**	12	**1**	2	**2**
	11	48	**2**	5	**2**	10	**1**	4	**1**	18	**2**	3	**3**
	12	43	**1**	3	**1**	13	**3**	2	**1**	10	**1**	3	**3**
						Exit Scores							
3	6	50	**3**	2	**1**	15	**4**	20	**5**	20	**3**	A	**1**
	7	52	**5**	7	**3**	16	**5**	24	**5**	27	**5**	4	**4**
	8	20	**1**	1	**1**	15	**4**	7	**1**	9	**1**	2	**2**
4	9	53	**6**	12	**6**	18	**6**	21	**5**	29	**5**	6	**5**
	10	48	**2**	15	**7**	19	**7**	24	**5**	31	**6**	6	**5**
	11	54	**8**	20	**9**	20	**8**	29	**6**	36	**9**	20	**9**
	12	50	**3**	11	**5**	19	**7**	22	**5**	33	**7**	6	**5**

Research Questions

The major goal of the instructional program in Reading Recovery is to aid the child in constructing a self-extending system, a network of strategies for operating on or with text (Clay, 1991). Some of what a child must weave into this network of strategies is included in the following:

(a) The aspects of print to which they must attend,
(b) The aspects of oral language that can be related to print,
(c) The kinds of strategies that maintain fluent reading and writing,
(d) The kinds of strategies that explore detail,
(e) The kinds of strategies that increase understanding,
(f) The kinds of strategies that detect and correct errors,
(g) The feedback control mechanisms that keep their reading and writing productions on track,

(h) The feed-forward mechanisms (like anticipation or prediction) that keep their information processing behaviors efficient, and

(i) Most important, how to go beyond the limits of the system and how to learn from relating new information to what is already known. (p. 326)

In order to explore the nature of children's development of networks of information in writing and teacher decisions that interacted with children's learning during the writing portion of Reading Recovery lessons to support the child's construction of a self-extending system, three questions were posed:

1. What is the nature of shared responsibility in writing as indicated by the child's independent writing, jointly constructed text, and text written by the teacher for higher and lower progress children at three points in time?
2. After the sentence is generated, what teacher decisions are made about words taken to fluency, use of Elkonin boxes, generating or copying for higher and lower progress children at three points in time?
3. What is the relationship between the texts read and student's independent writing early in the child's program?

It was argued that by detailing the progress of higher and lower outcome students within their Reading Recovery program, it would be possible to see what aspects of the network of information might have been constructed in the higher outcome children and those that might be missing from the written responses of the lower outcome children. It was further argued that from an analysis of written products, lesson records, testing data, and the early books and written texts that were a part of the child's instructional program, the early conjunction of reading and writing could be explored. This analysis is limited, however, to the corpus of decisions made by these particular teachers working with these particular students. There may be other decisions that could be equally effective that cannot be described due to the repertoire of actions and decisions observed in the teachers.

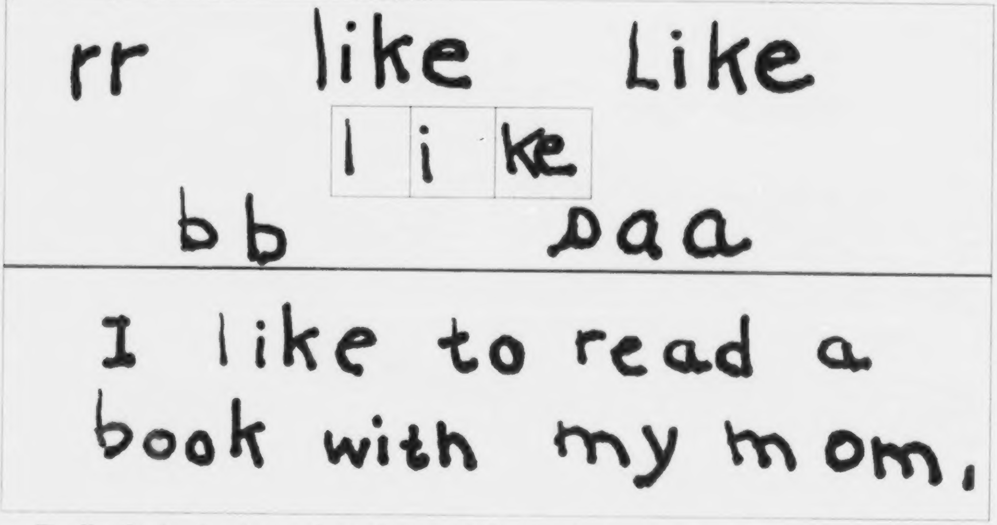
Procedures

Outcome data from a quasi-experimental research design were used to select students ($n = 12$) and teachers ($n = 4$) for this descriptive study: two teachers and their students who achieved higher outcomes in Reading Recovery and two teachers and their students who achieved lower outcomes. All students taught by each teacher were used as a means of exploring and controlling for the impact of the teacher's decisions on student progress. The analysis utilized videotapes of actual lessons, student writing books, Observation Survey (Clay, 1993b) tasks for pre and posttest measures, teacher records of student progress, and lesson records.

To assess shared responsibility, the writing books (see Figure 1) and lesson records were divided into three sections to represent the beginning of the child's program, the middle of the child's program, and the end of the child's program to determine differences in patterns of interaction that might occur at different times within the instructional program. The relationship that existed between independent, joint construction, and teacher-produced text within each writing segment was compared. Students were randomly selected from each teacher to do qualitative analyses within the larger study (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994). Time samples of the writing segments were analyzed at two points in time on the video records, the beginning of program (October), and the end of program (February).

Teachers' notes on their lesson records and an analysis of the students' writing on the top and bottom of the writing book (see Figure 1) provided a means of examining teacher decisions. The top page, referred to as the practice page, indicates the joint problem-solving or directions for student practice that resulted from the child's generated story. The bottom page contains the final results of the problem-solving engaged in by the teacher and child characterized by conventional spelling. Consequently, the practice page and observations noted in lesson records indicate the nature of decisions made about any one child at a particular point in time.

Figure 1. **Sample Pages in Writing Book.**



rr like Like

l i ke

bb Daa

I like to read a book with my mom.

Finally, the books that each student read during the first ten lessons and the vocabulary content were itemized and compared to the corpus of words the students wrote during the construction of the story. The texts produced were divided into words that were written independently, or those that were jointly constructed, or those written by the teacher. In each of the previous analyses, patterns of student progress and teacher decisions were contrasted between higher and lower progress children as a means of highlighting the effectiveness of teachers' decisions in guiding students' literacy learning.

Findings

Question 1. What is the nature of time use and shared responsibility in writing as indicated by the child's independent writing, jointly constructed text, and text written by the teacher for higher and lower progress children at three points in time in their Reading Recovery program?

An analysis of the amount of time allocated to the writing component across the first and last videotapes of randomly selected students within teacher groups instructing higher and lower outcome students indicated a variation in time across student outcomes (Table 3). Teachers of higher outcome students allocated more time to writing in general (*mean*, higher outcome = 9.8 minutes, range 7-12 minutes; *mean*, lower outcome = 6.6 minutes, range 3-12 minutes). A comparison of time at the beginning and end of the students' program indicated that teachers of higher outcome students also spent a greater portion of lesson time on writing early in a child's program (*mean*, time 1, 44 percent; time 2, 29 percent) than did teachers working with lower outcome students (*mean*, 28 percent, 31 percent respectively).

Table 3

Analysis of Time Spent on Writing During Videotaped Sessions

	Higher Outcome		Lower Outcome	
	Range	mean	Range	mean
Minutes Across Lessons	7-12	9.8	3-12	6.6
Time 1 — Percent on Writing		44.0 %		28.0 %
Time 2 — Percent on Writing		29.0 %		31.0 %

The results of the analysis of shared writing in written lessons of higher and lower outcome students can be found in Tables 4 and 5. There were marked patterns of interactions among higher and lower outcome students and teachers across the beginning, middle, and end of program designations. The percentages of independent writing by the children differed, with the higher outcome children participating more actively in writing complete words within lessons (*mean* = 56-66 percent, range 50-79 percent). Even during the beginning portion of students' programs, the higher outcome students wrote from 51-59 percent of the texts generated. This compared to 4-51 percent of the text contributed solely by the lower outcome students.

Table 4
Student Writing Book Analysis of Shared Responsibility in Writing for Higher Outcome Children

Teacher	Student	Responsibility	Time in Program Beginning % Weeks 1-5	Middle % Weeks 6-10	End % Weeks 11-15	mean
1	1	Child	58	68	72	66
	2		55	71	71	65
	3		51	63	66	61
	4		54	50	62	56
2	5		59	76	79	71
	1	Joint	33	32	28	31
	2		32	26	21	27
	3		40	27	24	29
	4		38	31	24	31
	5		38	22	15	26
	1	Teacher	9	0	0	3
	2		13	3	9	8
	3		9	10	10	10
	4		8	19	14	14
	5		4	2	6	4

Table 5
Student Writing Book Analysis of Shared Responsibility in Writing for Lower Outcome Children

Teacher	Student	Responsibility	Time in Program Beginning % Weeks 1-5	Middle % Weeks 6-10	End % Weeks 11-15	mean
3	6	Child	27	25	37	29
	7		25	28	37	29
	8		4	10	22	12
4	9		33	53	56	48
	10		59	76	79	71
	11		51	65	66	60
	12		41	56	52	50
3	6	Joint	23	54	56	45
	7		52	56	55	55
	8		25	51	37	38
4	9		26	32	38	32
	10		56	39	36	43
	11		38	23	25	29
	12		47	33	34	37
3	6	Teacher	51	22	7	26
	7		23	16	8	16
	8		71	39	41	49
4	9		33	14	12	20
	10		11	8	9	9
	11		11	12	9	11
	12		12	11	14	12

Texts were jointly produced by the higher outcome students and teachers approximately one-third of the time (*mean* = 26-31 percent, range 21-40 percent). This compared to a much higher percentage of words jointly constructed by the lower outcome students under the direction of their teachers (*mean* = 26-31 percent, range 23-56 percent).

The teachers elected to write words for the students to a lesser degree in the higher outcome group than they did for the lower outcome group. The teachers of higher outcome students wrote for them from 0-19 percent of the time, with teacher means of 3-14 percent of the time. The range of words written by teachers of lower outcome students was 8-71 percent, with teacher means of 9-49 percent across children.

The higher outcome students took progressively more responsibility for writing across their instructional program, writing a little more than half of the text by themselves during the early portion of lessons, increasing this participation to 62-79 percent of the time by the end of lessons. Consequently, there was also a reduction in joint problem-solving as the students grew in competence. This indicated that students were also able to do more of the problem-solving on new words independently as well as gaining in the number of words they could write independently. The one teacher whose students made better progress yet achieved lower outcomes overall indicated some of these tendencies as well (Teacher 4). Patterns of shared responsibility suggested that all teachers and children acted independently and shared problem-solving to accomplish the task of writing in Reading Recovery lessons. However, children were led to greater independent action and problem-solving on new words when their teachers supported their efforts consistently across lessons. The teachers aided the students in forming messages that allowed students to operate as independently as possible. The teachers allocated sufficient time based upon students' needs at different times in their instructional programs, and supported their efforts at independent problem-solving. By these means, increases in independent action were obtained.

Question 2. After the sentence is generated, what teacher decisions are made about words taken to fluency, use of boxes, generating, or copying for higher and lower progress children at three points in time?

In order to address this question, entries written on the practice page were identified by purpose: fluency practice, hearing sounds in words (phonological analysis), and generating from known to problem-solving new words through analogy and copying. There were different patterns in teacher decisions between higher and lower outcome groups about words taken to fluency, use of the hearing sounds in word boxes, generating from known words to problem-solving new items, or copying across teachers of higher and lower outcome students (see Table 5). In general, there were great differences in the number of entries on the practice page, with the total number of entries varying from 103-268 for higher outcome students, and 25-151 entries for the lower outcome students. One of the teachers directed students to problem-solve or practice very little across lessons (25-47 total number of entries) and her students made the least progress of any of the four teachers. The second teacher whose students achieved lower outcomes tended to utilize the practice page more often (116-151 total entries) and her students tended to do better in the final testing (see Table 1).

Most of the teachers directed students to take high frequency words to written fluency on the practice page across lessons, even the teacher whose students tested the lowest overall at the end of the year. However, the use of boxes for hearing sounds in words, a tool used by the teacher for problem-solving new words and the selection of known vocabulary from which to help students problem-solve new words through analogy (generating) were used consistently by the teachers whose students achieved higher outcomes. These data suggest that fluent practice of known words, the child's analysis of hearing sounds in words, and using known words to problem-solve new words through analogy support the young child's ability to organize and act upon the world of print (Table 6).

The teachers called upon known vocabulary to help students problem-solve new words through analogy (generating) less during the beginning of their programs, but used it relatively

Table 6
Analysis of Practice Page Entries for Higher and Lower Outcome Children

Teacher	Student	L#	Total Entries	Beginning F	Beginning B	Beginning G	Beginning C	Middle F	Middle B	Middle G	Middle C	End F	End B	End G	End C
1	1	62	171	18	15	2	13	23	34	8	0	23	26	9	0
	2	27	103	15	16	0	0	29	8	3	0	19	7	6	0
	3	62	197	41	37	2	0	32	19	9	0	31	17	9	0
	4	98	268	46	41	0	0	45	39	9	0	24	35	29	0
2	5	63	182	47	22	0	6	27	8	2	22	21	10	2	15
3	6	53	40	7	3	0	1	9	0	0	2	14	0	0	4
	7	59	47	13	2	0	5	12	0	0	6	9	0	0	0
	8	48	25	4	2	0	0	7	1	0	3	5	2	0	1
4	9	68	119	34	6	0	0	48	9	3	0	17	2	0	0
	10	64	151	43	6	1	0	51	11	5	0	28	1	5	0
	11	64	116	48	16	1	0	25	4	12	0	10	0	0	0
	12	62	149	51	8	0	0	39	10	6	0	31	1	3	0

F = Fluency
B = Boxes
G = Generating
C = Copying

consistently throughout the rest of the students' programs. The consistent use of boxes and generating new words from a known core were used to facilitate the higher outcome children's ability to problem-solve independently. Copying was used very little and only by two teachers. One teacher in the higher outcome group and one in the lower outcome group tended to write words for the child on the practice page for the student to copy.

The data suggest that fluent practice of known words, the child's analysis of hearing sounds in words, and using known words to problem-solve new words through analogy support the young child's ability to organize and act upon the world of print. The teacher's decisions about how to apply these tools to scaffold and extend children's writing and spelling development across their instructional program are related to growth and accelerative progress. Students made rapid progress when teachers guided their growth through practicing, fluent word writing, encouraging independent phonological analysis, generating new words from known exemplars, and flexible use of time. Copying appeared to offer very little power for students in supporting their developing concepts of print and phonological awareness.

Question 3. What is the relationship between the texts read and independent writing early in the child's program for higher and lower outcome students within the first ten lessons of their Reading Recovery instructional program?

In order to address this question, the story texts that were read by each of four children, two higher progress and two lower progress, were compared to the written stories they produced. This analysis produced a comparison of texts read, numbers of different vocabulary encountered across multiple readings of texts, and the writing that children did in lessons (see Table 7).

In terms of storybook reading during the first ten lessons, the children read a little more than five books in each lesson (*mean* = 5.42) with a range of four to seven texts read and an average of 18 different texts read across the four students. These texts were early level

Table 7
Nature of Vocabulary Explored in Reading and Writing Across the First Ten Lessons

	Higher Outcome		Lower Outcome	
Student	1	5	9	7
Number of texts read per lesson	6.7	4.7	5.4	4.9
Number of different texts read	9	18	17	18
Number of different words encountered	118	190	109	142
Total number of words across multiple readings	1572	1871	1264	1637
Written words from texts read	22	19	11	8
Written words not in text read	7	23	23	29
Number of different words written independently	11	12	6	3
Total of independently written words	37	20	12	12
Jointly constructed	14	26	11	20
Elkonin boxes	5	11	2	1
Written by teacher	4	6	0	15

instructional books ranging from text levels one through four. The higher progress children read 118 and 190 different vocabulary items across the ten lessons with multiple readings of texts bringing their total of vocabulary encountered through text reading to 1572 and 1871 respectively. The general indicators were similar for the lower progress students who encountered 109 and 142 different vocabulary items totaling 1264 and 1637 total vocabulary read across the ten lessons analyzed.

There were marked differences, however, in how the higher and lower outcome teachers integrated the texts students read into the writing students accomplished. The higher outcome students generated sentences that included vocabulary also in the texts they read to a greater degree, although they also wrote vocabulary that was different from that found in the storybooks they read. The higher outcome students wrote more independently than the lower outcome students. The joint problem-solving that occurred within the ten lessons was similar across teachers, however, the higher outcome students did more joint analysis through the teachers' use of the Elkonin boxes (n = 5, 11) while the teachers of lower outcome students did what is referred to as sharing a pen rather than utilizing the tool of Elkonin boxes (n = 2, 1). The teachers of lower outcome students also tended to write more of the text for the students.

The written text that students wrote independently and in conjunction with their teacher's support are aligned together in Tables 8 and 9. A consistent pattern that arose from the comparison of text read and text written across the first ten lessons indicates how the interrelationships children construct across reading and writing emerge. A consistent pattern across these four children suggested that the children were more likely to write words independently that they encountered across multiple texts and extend the corpus of sound relationships to other like cases with opportunities to read and write. The teachers of higher outcome children were able to orchestrate links between reading and writing more effectively between the books read and texts written, as suggested by the fact that there were more common

Table 8

Attention to Print in Initial Lessons of Higher Outcome Students

	Print Setting in Reading			Print Setting in Writing		
Student	Vocabulary	Repeated readings	Number of different texts	Independent writing or joint constructions*		Teacher support
#1	the	233	10	the	8	
	up	121	4	up	1	
	to	96	4	to	6	
	go	81	3	go	3	
	I	80	6	I	7	
	like	74	3	like	2	4
	my	46	3	my: m		1
	can	20	2	can	4	1
	is	14	1	is: s		1
	home	14	1	home: m		1
	at	12	1	at: t; at	1	1
	tree	8	2	tree: t; te		3
	mom	7	3	mom	2	
	cat	6	2	cat	1	
	pool	6	1	pool: p		1
	zoo	6	1	zoo	1	
	climbing	4	1	climb: m		2
	ride	3	2	ride: rd		1
	swimming	3	1	swim: sm		1
	bear	2	1	(bear)		1
	car	2	1	car: r		1
	house	2	1	house: h		1
				work: wk		1
				with: w		2
				eat: et		2
				in	1	
				(salad)		1
				(chocolate)		1
				(cake)		1
#5	the	160	11	the	2	
	a	91	4	a	5	
	I	68	7	I	1	
	to	56	2	to	1	
	said	34	2	said	1	
	and	25	5	and	1	
	little	16	3	little: lt		1
	big	15	2	big: bg; big		2
	wolf	14	1	(wolf)		1
	fish	14	2	(fish)		1
	cat	12	3	cat: ct		1
	pig	10	1	pig		1
	school	9	2	school: shol		1
	bird	9	3	birds: bds		1
	got	7	1	got		1
	frog	6	1	frog: frg		1
	flowers	6	1	flowers: frs		1
	out	4	1	out: ot		1
	all	4	1	all	3	
				some: sm		1
				windy: win		1
				tried: td		1
				kinds: kds; kinds		2
				very: ve		1
				outside: ot		1
				animals: as; anls		2
				nice: ni		1
				bikes: is		1
				things: ths; things		2
				numbers: nmbrs		1
				(think)		1
				there: thr		1
				(bubble)		1
				(named)		1
				of: of		3
				after: aftr		1
				kids: kds; kids		2
				saw: s		1
				fence: f		1
				having: hav		1
				fun: fun		1
				(were)		1

*Note. Use of parentheses indicates the teacher wrote item for the child.

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Table 9

Attention to Print in Initial Lessons of Lower Outcome Students

	Print Setting in Reading			Print Setting in Writing		
Student	Vocabulary	Repeated readings	Number of different texts	Independent writing or joint constructions*		Teacher support
#9	the	114	3	the	4	2
	I	63	3	I	3	
	in	26	2	in	1	
	my	17	3	my	1	3
	and	10	2	(and)	4	1
	mom	9	2	(mom)	2	
	tree	8	1	tree: te		1
	cat	6	1	cat	1	
	birthday	4	1	(birthday)		
	teacher	3	1	(teacher)		
	like	3	1	like	1	1
				name	1	
				chunky: c		1
				trouble: t		1
				corect: ct		1
				lunch: l		1
				leaves: l		1
				it: t		1
				cold: c		1
				eating: e		1
				dog: d		1
				food: f		1
				(good)		
				(likes)		
				(me)		
				(wrote)		
				(thing)		
				(on)		
				(chalkboard)		
				(with)		
				(she)		
				(nice)		
				(weather)		
#7	the	174	7	the	2	
	is	7	3	is	1	
	I	77	3	I	8	
	my	37	2	my: m	1	5
	in	36	2	(in)		
	up	27	1	(up)		
	and	16	3	(and)		
	to	2	1	to: t		2
				fire: f		1
				station: t		1
				ate: t		1
				toast: tst		1
				for: fr		1
				breakfast: t		1
				stayed: st		1
				slept: s		1
				brother: e		1
				Bubby's: B		1
				room: rm		1
				till: tl		1
				bedtime: b		1
				bikes: s		1
				been: be		1
				(at): t		4
				(have): h		2
				(house): h		1
				(paste)		
				(this)		
				(morning)		
				(stayed)		
				(friends)		
				(kids)		
				(went)		
				(grandpa)		
				(grandpa's)		
				(practicing)		
				(new)		

**Note.* Use of parentheses indicates the teacher wrote item for the child.

words across reading and writing by higher outcome children than with the lower outcome students. All children generated stories that included words not part of their reading, however, the overlap between text reading and the composed sentences was greater for higher outcome students and this may have been a facilitating factor in aiding children's conjunction of sources of information from both reading and writing. Table 10 includes a complete listing of the sentences written by higher and lower outcome students across the first ten lessons of their Reading Recovery program. These data suggest that when the teachers seek to make links across reading and writing events being sensitive to students' strengths in writing and reading, the students are aided in the construction of analogies. This resulting network of analogies feed into the students' ongoing theory development of how print works.

The result of this conscious effort on the teachers' part to aid children in confirming these emerging theories against the print they explored in their environment can be seen from data presented in Table 11 on growth in vocabulary across the instructional program. There were consistently greater numbers of words written independently in the extended evaluation period referred to as *roaming around the known* across the first ten lessons and throughout the total program as indicated by the numbers of words written on the final assessment (higher outcome, $n = 40, 63$; Lower outcome, $n = 24, 21$), with a total of different vocabulary items written independently across lessons and assessments of 57, 80, 30, and 40, even though the students entered the program with similar strengths.

The character of the independently written vocabulary also suggested that the higher outcome students formed sets of sets (Tharp & Gallimore, 1988) or used analogy more strongly to organize their world of print. In the final test setting, the higher outcome students were more likely to group *cook, book, look,* and *took* together, forming chains of associations (Goswami & Bryant, 1990), categorizing what they wrote and read based upon analogies each learner constructed.

Discussion

For the emergent reader and writer, research suggests that a key factor in their literacy development is in understanding the symbolic uses of written language (Vygotsky, 1978; Luria, 1983) and more specifically, in their understandings of the phonological features (Goswami & Bryant, 1990; Read, 1986) within oral language and how these were represented by written symbols. It was proposed that this study would offer insights into two areas of literacy learning and instruction: (a) the conjunction of reading and writing or the reciprocal nature of reading and writing, and (b) the nature of effective teacher decisions that support children's literacy learning in Reading Recovery lessons.

Within this study of twelve students, there was clear evidence that the children were able to develop conceptual links from the varying print settings that occurred across reading and writing events. In Reading Recovery lessons, there are planned experiences that are juxtaposed to facilitate the development of a self-extending system in learning to read and write. Across lessons, these reading and writing events support children's theories of how print works in both processes. The current study suggested there were some key ideas that facilitate the conjunction of reading and writing: (a) constant analysis of what children know, how children engage in problem-solving, and strategies they are developing; (b) drawing consistent links from a known corpus of information to use in new settings; (c) an emphasis on independent action and problem-solving; and (d) the importance of challenging learning settings.

As a result of opportunities to read, talk with their teachers about books, and write messages about their world of books and life experiences, the twelve children negotiated their understanding of print, conventions, story, and how to utilize their own theories of how print works in reading and writing text. They began with a few words, their names, and a few sound-letter relationships. In the early testing through the Observation Survey (Clay, 1993b), Student #1 was able to write *I, see, the,* and *cat* and represent the sounds of *m, t,* and *o* in writing. In the initial *roaming around the known* period, he added *to* and *at* to his corpus of fluently written words. As he jointly constructed text or wrote independently in the first ten lessons, he gained

Table 10
Sentence Writing Across Ten Lessons for Higher and Lower Outcome Students

Student	Lesson	Sentence
1	1	I like to eat salad.
	2	I can climb a tree.
	3	The bear is at home.
	4	I like to go to the zoo.
	5	I like to eat chocolate cake.
	6	The cat can climb the tree.
	7	I can ride in the car.
	8	I can go up the tree house.
	9	I like to go to the work with Mom.
	10	I can swim in the pool with my mom.
5	1	A cat tried to get all kinds of animals.
	2	A little frog saw a big flowers and big birds.
	3	I think there was nice bikes.
	4	It was very windy outside.
	5	Kids played all kinds of things after school.
	6	All kinds of animals wear all kinds of things.
	7	A fish said, "Bubble, bubble, bubble."
	8	The wolf named some numbers.
	9	A little pig got out of the fence.
	10	The kids were having fun.
7	1	I cut and paste this morning.
	2	I stayed at my friends house.
	3	The kids went to the fire station.
	4	My grandpa is at my house.
	5	I ate toast for breakfast.
	6	I stayed at my grandpa's.
	7	I slept in my brother Bubby's room.
	8	I stayed up till bedtime.
	9	I have two bikes.
	10	I have been practicing at my new house.
9	1	Janet is good.
	2	The teacher likes me.
	3	I wrote the correct thing on the chalkboard.
	4	My mom is eating lunch with me.
	5	I like my teacher. She is nice.
	6	I like the trees and the leaves.
	7	It is my birthday.
	8	The weather is cold.
	9	My cat is eating dog food.
	10	The books are easy.

Table 11
Growth in Written Vocabulary Across Lessons

	Higher Outcome		Lower Outcome	
Student	#1	#5	#7	#9
Observation				
Pretest	I	i	name	name
	see	a	red	8 attempts
	the	go	girl	teh (the)
	cat	no	the	le (I)
	m,t,o,p	to	b,s,m.g,s,h,r	bet (blue)
		B,k,c,t,s,p,h		tet (the)
				cahe (cat)
				pen (pig)
				i,e,s,o,p
Roaming	to	I	name	name
	a	the	red	
		we	girl	
		put		
		red		
		in		
		a		
First week	at	get	I	in
	go	all	the	is
	zoo	it	is	good
		was		the
		and		on
		play		
		think		
		kinds		
Second week	in	said		I
	can	were		
	up	some		
		got		
		pig		
Different vocabulary posttest, end-of-year testing and lesson records	cook	I	I	cat
	book	is	I'm	dog
	look	in	is	mom
	took	it	in	dad
	looks	to	it	on
	go	on	my	in
	going	do	me	is
	good	into	we	I
	be	a	went	him
	we	at	to	a
	he	an	go	and
	she	am	on	at
	like	and	off	am
	ride	ran	big	sad
	side	can	for	had
	made	has	had	to
	is	cat	name	the
	in	cats	the	they
	into	dog	a	me
	to	dogs	at	my
	and	am	and	bus
	can	has	are	vow
	cans	ran	red	you

Table 11. *Growth in Written Vocabulary Across Lessons* **(continued)**

	High Outcome		Low Outcome	
Student	#1	#5	#7	#9
Different vocabulary posttest, end-of-year testing and lesson records (continued)	cat	the	bed	they
	cats	then	have	today
	the	they	had	go
	then	this	today	do
	them	go	Mom	coke
	out	going	dad	have
	made	good	not	move
	I	we		time
	Mom	me		red
	Dad	he		eat
	name	she		stop
	down	see		toast
	up	like		seed
	my	live		back
	me	ride		good
	come	made		out
	comes	have		
	some	look		
	play	little		
	playing	find		
	pig	play		
	big	may		
	at	way		
	bat	say		
	car	day		
	cars	here		
	see	were		
	bee	her		
	zoo	him		
	zoos	you		
	stop	dig		
	boy	big		
		no		
		now		
		stop		
		car		
		red		
		black		
		blue		
		green		
		one		
		two		
		three		
		five		
		six		
		yes		
		what		
		are		
		over		
		did		
		up		
		for		
		mom		
		dad		
		love		
Total	**57**	**80**	**30**	**40**

flexibility in utilizing this information and extended his learning to write *go, like, can,* and *in* and wrote the letters, *m, s, t, o, p, r, d, h, w, k,* and *e,* as contributions during joint problem-solving on new words.

This early corpus of knowledge was critical to how Student #1 read texts as well. The teacher's records indicated how early in the lessons the written vocabulary provided anchors for the student in text reading. Student #1 used *like, the, at,* and *can* as anchors to help monitor his reading and began to attend to words that had known letter-sound relationships within them such as the letters, *m , r,* and *p,* in *my, car,* and *pool.* Comments like "Soup ends with p," "There's an *r* at the end of that word" (builder), and self-correcting the spoken word *rug* for the text item *mat* because he saw the *m,* were all noted in the teacher's records. The data indicate that what the students in this study could write and aspects of phonological features they could use to problem-solve in writing began to aid their problem-solving as readers. What they could read eventually began to inform their problem-solving in writing. By placing an emphasis across lessons on what the child knows or can use in problem-solving, the teacher supports the child's construction of a network of information to use in both reading and writing.

In early lessons, the most effective teachers allocated more time to writing and selected books so that the sources of knowledge the children had as writers and readers could be capitalized upon and extended. Because Student #1 had a particular set of words and special cues within text available to him as resources, his teacher selected books that would allow him to operate independently as a reader of text as well. Vocabulary such as *I, the, cat, Mom, see, up, can, to, go,* and *am* were part of the texts she chose for him to read to capitalize on his strengths. As opportunities arose in reading and writing, she drew attention to how these known features could be used to help him locate where he was in the text, matching spoken and written words.

In helping Student #1 generate sentences for the day's writing, the conversation the higher outcome student and his teacher had about the world of narrative from the stories they read and the experiences they talked about were the basis of composing the sentences (see Table 9). For example, two familiar books were read that dealt with eating or foods on day one of lessons. He then generated the sentence, "I like to eat salad." There was a conscious effort from the higher outcome teachers to build on the stories children read during writing in addition to the personal experiences they wrote about, to help them integrate, confirm, and extend the theories they developed about print across multiple texts and language opportunities. The teachers' conversations drew consistent links from the known corpus of information to encourage the children to use it in new settings. In this way, the teachers were able to provide multiple ways for the children to learn two important aspects about literacy: (a) the aspects of print to which they must attend, and (b) the aspects of oral language that can be related to print (Clay, 1991, p. 326).

Writing allows children to explore a narrow corpus of written language. Children articulate each word slowly and analyze the phonological features of the message to be written. The task of hearing sounds in words helped the higher outcome children in this study assign a place value, so to speak, for the phonemes they articulated within words. In this way, they learned how to manipulate language at the phonemic level, an ability that must be taught to the majority of first grade children (Goswami & Bryant, 1990). By learning to represent the sounds they heard in words and the other features that also applied, each child began to construct a system of categories that eventually lead them to make such statements as, ". . . cave, it either starts with a *c* or a *k*." Through the use of techniques of hearing sounds in words and going from known to problem-solving on new, the higher outcome students operated at high levels of problem-solving and were encouraged to independently apply their growing systems of knowledge in more complex ways.

The teacher's role in this process is to support this concept development and extend this growing network of analogies. For example, Student #1 wrote the sentence, "The bear is coming home," and his teacher drew on the fact that he was attending to words with *s* in them. The story he had read the day before and his running record that day had the vocabulary item *is* in it (7 times). She asked him to try to write *is* on the practice page. He wrote "si," drawing on visual information. She then asked him to "Check to see if you are right." By running his finger under the word to check on his writing, he noticed that the letter *s* was in the wrong place. She pointed out how good it was that he noticed how *is* looked, that he also knew when it was not quite right. Then she showed him how it looked and had him practice it a few times. The higher outcome teacher consistently placed an emphasis on independent action and problem-solving. This may have been one factor in the student's rapid progress.

This emphasis on independent action and problem-solving could also be seen in the types of challenge the higher outcome teachers placed before their children. By week five of the instructional program, the higher outcome students (#1 and #5) read at text level four and six, respectively. The lower outcome students (#7 and #9) read at four and two. At week ten, the higher outcome students were at levels eight and nine, while the lower outcome students were at seven and three. By week fifteen, the higher outcome students read at sixteen and nine. The lower outcome students were at ten and five. Student #1 ended up making the most consistent accelerative progress, although he had started out testing the lowest of the four students highlighted in this portion of the analysis. One key factor was his teacher's ability to keep the level of challenge in both reading and writing at the cutting edge of his new learning, as well as her ability to support that learning with all the tools she had available to her as a teacher. Intuitively, she understood that eventually a child learns more rapidly about complex orthography through text reading (Clay, 1991; Goswami & Bryant, 1990). Consequently, the flexible use of reading and writing across the child's program, keeping the child operating independently, drawing links from known sources of information to problem-solve new elements, and maintaining sufficient challenge to maintain a forward direction in learning were all key components to effective instruction to support the convergence of reading and writing.

Figure 2 presents a model of the reciprocity between reading and writing; how children move from early learning where reading and writing are almost separate systems of knowledge to fully reciprocal processes, each contributing to the development of the other. Each portion of the Reading Recovery lesson framework allows students to negotiate and test their developing theories of print, how stories are constructed, how written language works; confirming or disconfirming hypotheses of print, story, and the world of written language.

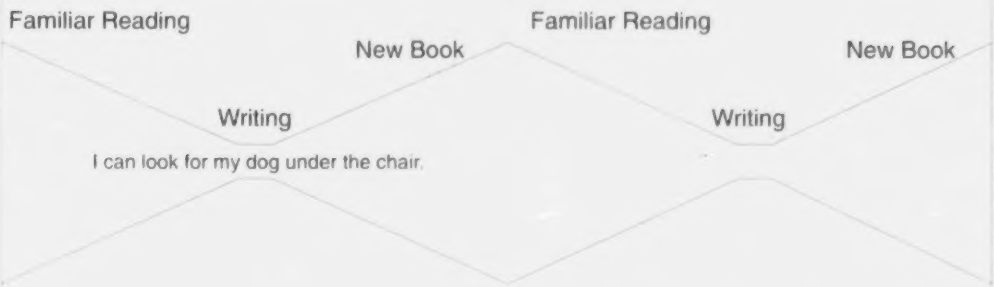
As this model suggests by the ever converging and diverging lines, the child's attention to print focuses and expands within the different reading and writing experiences encountered in Reading Recovery. In text reading, Clay (1993a) suggested there are twin aims:

- One is to allow the child scope for practicing the orchestration of all the complex range of behaviors he or she must use (and this is best achieved on easy or familiar texts).
- The other is to encourage him to use his reading strategies on novel texts and to support his or her tentative efforts. (p. 36)

In familiar reading, the child's familiarity with the meaning and language of the story frees his or her attention to explore new aspects of story and text. In the reading of yesterday's new book, while the teacher takes a running record the child is working on text read only once before, testing out some newly acquired strategies and attending to print more closely. In reading the new book, the child encounters a volume of print and the teacher works to draw the reader's attention to the different sources of information across text that will support the child's reading for meaning.

In the writing portion of the lesson, the child attends to the details of print, exploring sound-letter relationships within a narrow corpus of printed information. The child's innate abilities to be sensitive to the sounds of many different language phonemes and to categorize through the use of analogy (Goswami & Bryant, 1990) are key to the development of reciprocity in writing and reading. In writing, the child categorizes the sound and visual aspects of print ("This begins like my name!") through analogy. As she or he encounters the same information in new texts, the knowledge about print is expanded, and the child works to fill out and extend the categories being built, hypothesizing new relationships about print, language, and meaning. As the child continues to read and write, what he or she knows as a reader and writer begins to expand and become integrated.

Figure 2. **Reciprocity Between Writing and Reading.**



In familiar reading . . .

- Understanding of meaning and language frees the child's attention to explore new aspects of story and text.

In writing . . .

- The child attends to the details of print.
- The child explores sound-letter relationships within a narrow corpus of printed information.
- The child categorizes sound-letter correspondences and visual aspects of print using analogy.
- The child explores discrepancies between sound and visual orthographic concepts.

In the new book . . .

- The child encounters a volume of print, confirming the categories established initially through writing.
- Through analogy, the child fills out and extends categories and hypothesizes new relationships about print, language, and meaning.
- The child confirms complex conditional orthographic rules.

Initially, reading and writing develop as separate systems of knowledge . . .

Soon, the systems of knowledge developed across encounters with reading and writing merge, so that children simultaneously learn about both processes . . .

Eventually, children learn more about complex orthography through reading.

At this early point in children's learning, the teaching is critical, as are the patterns within the symbol system that naturally occur across written language events. Teachers note what information comprises the separate systems of knowledge for children in reading and writing and links what children know through analogies across reading and writing events. Teachers *dig ditches* connecting the separate pools of knowledge so that information begins to be applied from one to the other, back and forth, until the systems of knowledge held in reading and writing converge. Eventually, children learn more about complex orthography through reading (Goswami & Bryant, 1990).

In the metaphor of ditch digging, the teacher must reflect on possible strategies, or in-the-head processes the reader and writer are orchestrating or need to draw upon. As Clay (1991) suggested:

> By means of a network of unobservable in-the-head strategies the reader is able to attend to information from different sources (e. g., reading and writing, oral language and visual learning, meaning and phonology). The good reader can work with both internal and external information and make decisions about matches and mismatches in his or her responses. A dynamic network of interactive strategies allows the reader to change direction at any point of the processing path. (p. 328)

Consistently, the teachers within this study acted upon the notion that children's developing control grows through sequences of behaviors as can be observed when infants meet novel situations (Bruner, 1974):

- There is increased anticipatory behaviour (such as random excited movement of the hands);
- Some behaviours occur but not necessarily in an order that works;
- The behaviour is less variable, uses less effort; and
- The behaviour pattern becomes efficient. (p. 329)

When these behavior patterns and sequences of events recur over time, learners establish new ways of operating (Clay, 1991):

- Some subroutines can be practised without carrying out the whole act and they may become efficient before others;
- A subroutine may be dropped from the act because it is no longer a necessary part; and
- An initial first pattern of action may be displaced by a new routine, a drastic change over the earlier pattern, yet still allowing the old pattern to recur. In this case a higher order pattern has taken over. (p. 330)

The information networks that students began to utilize through lessons in Reading Recovery were powerful sources of personal knowledge for their continued learning in classroom settings. As Clay (1991) indicated from her review of Bruner's (1974) account of infants learning to organize skilled action, "we increase our powers by converting bodies of knowledge into generative rules for thinking about the world and about ourselves" (p. 330). Within this study, the data presented suggested that what children learned through writing in lessons was how to construct generative rules to aid them in learning through text, both reading and writing. The items of knowledge children drew upon at first were later fed into more powerful strategies. As Clay stated, "Only the child can develop strategic control over the experiences and information coded somehow in his brain and governing many of his behaviours" (p. 342).

The teacher supports, asks questions to extend, and works to keep the child's theory development on track. The goal of literacy instruction is to aid the literacy system to become self-extending and for the child to become self-managed and able to learn independently in the complex world that surrounds him or her.

References

Bruner, J. S. (1974). Organization of early skilled action. In M. P. M. Richard, *The integration of a child into a social world* (pp. 167-184). London: Cambridge University Press.

Butler, A., & Turbill, J. (1984). *Towards a reading-writing classroom*. Rozelle, NSW: Primary English Teaching Association.

Cazden, C. B. (1988). *Classroom discourse: The language of teaching and learning*. Portsmouth, NH: Heinemann.

Clay, M. M. (1985). *The early detection of reading difficulties*. Portsmouth, NH: Heinemann.

Clay, M. M. (1991). *Becoming literate: The construction of inner control*. Portsmouth, NH: Heinemann.

Clay, M. M. (1993a). *Reading Recovery: A guidebook for teachers in training*. Portsmouth, NH: Heinemann.

Clay, M. M. (1993b). *An observation survey of early literacy achievement*. Portsmouth, NH: Heinemann.

Clay, M. M., & Cazden, C. (1990). A Vygotskian interpretation of Reading Recovery tutoring. In L. Moll (Ed.), *Vygotsky and education: Instructional implications and applications of sociohistorical psychology* (pp. 206-222). Cambridge, UK: Cambridge University Press.

Cochran-Smith, M. (1984). *The making of a reader*. Norwood, NJ: Ablex.

DeFord, D. E. (1986). Classroom contexts for literacy learning. In T. E. Raphael (Ed.), *Contexts of school-based literacy* (pp. 163-180). New York: Random House.

Dyson, A. H. (1989). *Multiple worlds of child writers: Friends learning to write.* New York: Teachers College Press.

Eckhoff, B. (1983). How reading affects children's writing. *Language Arts, 60,* 607-616.

Elkonin, D. B. (1973). U.S.S.R. In J. Downing (Ed.), *Comparative reading* (pp. 551-580). New York: Macmillan.

Goodman, K. S., & Goodman, Y. (1979). Learning to read is natural. In L. B. Resnick & P. B. Weaver (Eds.), *Theory and practice of early reading: Vol. 1* (pp. 137-154). Hillsdale, NJ: Lawrence Erlbaum.

Goswami, U., & Bryant, P. (1990). *Phonological skills and learning to read.* East Sussex, UK: Lawrence Erlbaum.

Greenfield, P. M. (1984). A theory of the teacher in the learning activities of everyday life. In B. Rogoff & J. Love (Eds.), *Everyday cognition: Its development in social context.* Cambridge: Harvard University Press.

Griffin, P., & Cole, M. (1984). Current activity for the future: The zoped. In B. Rogoff & J. V. Wertsch (Eds.), *Children's learning in the "zone of proximal development" (New Directions for Child Development, No. 23)* (pp. 45-64). San Francisco: Jossey-Bass.

Halliday, M. A. K. (1975). *Learning how to mean: Explorations in the development of language.* London: Edward Arnold.

Harste, J. C., Woodward, V. A., & Burke, C. L. (1984). *Language stories and literacy lessons.* Portsmouth, NH: Heinemann.

Heath, S. B. (1983). *Ways with words: Language, life and work in communities and classrooms.* New York: Cambridge University Press.

Irwin, J. W., & Doyle, M. A. (1992). *Reading/writing connections: Learning from research.* Newark, DE: International Reading Association.

LaBerge, D., & Samuels, S. J. (1974). Toward a theory of automatic information processing in reading. *Cognitive Psychology, 6,* 293-323.

Luria, A. R. (1983). The development of writing in the child. In M. Martlew (Ed.), *The psychology of written language: Developmental and educational perspectives* (pp. 237-277). New York: Wiley.

Lyons, C. A. (1993). The use of questions in the teaching of high risk readers: A profile of a developing Reading Recovery teacher. *Reading and Writing Quarterly, 9,* 317-327.

Lyons, C. A., Pinnell, G. S., & DeFord, D. E. (1993). *Partners in learning: Teachers and children in Reading Recovery.* New York: Teachers College Press.

McLane, J. B. (1990). Writing as a social process. In L. Moll (Ed.), *Vygotsky and education: Instructional implications and applications of sociohistorical psychology* (pp. 304-318). Cambridge, UK: Cambridge University Press.

Perfetti, C. A., Beck, I., Bell, L. C., & Hughes, C. (1987). Phonemic knowledge and learning to read are reciprocal: A longitudinal study of first grade children. *Merrill-Palmer Quarterly, 33,* 283-319.

Pinnell, G. S. (1989). Reading Recovery: Helping at-risk children learn to read. *The Elementary School Journal, 90,* 161-183.

Pinnell, G. S., Lyons, C. A., DeFord, D. E., Bryk, A. S., & Seltzer, M. (1994). Comparing instructional models for the literacy education of high risk first graders. *Reading Research Quarterly, 29*(1), 9-38.

Read, C. (1986). *Children's creative spellings.* London: Routledge and Kegan Paul.

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context.* New York: Oxford University Press.

Rohl, M., & Tunmer, W. E. (1988). Phonemic segmentation skill and spelling acquisition. *Applied Psycholinguistics, 9,* 335-350.

Scardamalia, M., & Bereiter, C. (1982). Assimilative processes in composition planning. *Educational Psychologist, 17,* 165-171.

Spivey, N. N., & King, J. R. (1989). Readers and writers. *Reading Research Quarterly, 24,* 9-26.

Stotsky, S. (1983). Research on reading/writing relationships: A synthesis and suggested directions. *Language Arts, 60,* 627-643.

Tharp, T. G., & Gallimore, R. (1988). *Rousing minds to life: Teaching, learning, and schooling in social context*. Cambridge: Cambridge University Press.

Vygotsky, L. S. (1978). *Mind in society*. Cambridge: Harvard University Press.

Wells, G. (1986). *The meaning makers: Children learning language and using language to learn*. Portsmouth, NH: Heinemann.

Wertsch, J. V. (1979). From social interaction to higher psychological processes: A clarification and application of Vygotsky's theory. *Human Development, 22*, 1-22.

Wertsch, J. V. (1985). *Vygotsky and the social formation of mind*. Cambridge: Harvard University Press.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem-solving. *Journal of Child Psychology and Psychiatry, 17*, 89-100.

DESCUBRIENDO LA LECTURA: AN EARLY INTERVENTION LITERACY PROGRAM IN SPANISH

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Need and Significance

THERE ARE CURRENTLY 7.5 MILLION SCHOOL AGED CHILDREN IN THE UNITED States who enter school speaking languages other than English (Lyons, 1991). About 70 percent of these students speak Spanish as a first language (Lyons, 1991). The number of Spanish-speaking students entering U. S. schools has steadily increased over the past decade. These children constitute the fastest growing group in U. S. public schools (Brown, 1992).

During the past twenty years, bilingual education programs have been widely implemented in the U. S. as a means of providing quality educational experiences to these Spanish-speaking language minority students. Politically, bilingual education has been extremely controversial. However, research studies have established that bilingual programs are pedagogically sound when fully implemented with well qualified staff and administrative support (Cummins, 1989; Hakuta, 1987).

Bilingual programs are implemented in many different ways. However, they generally utilize a child's native language for initial literacy development and gradually add English as a second language. This model has demonstrated that initial success in native language literacy provides a base for subsequent success in English (Escamilla, 1987; Krashen & Biber, 1988; Ramírez, Yuen, & Ramey, 1991).

In spite of these achievements and the overall positive impact of bilingual education programs, there are some language minority students who have not achieved the desired results in native language or second language literacy. These students, like their English-speaking counterparts, may have difficulty at the beginning stages of literacy acquisition, requiring special attention or something extra in the way of instruction to achieve the levels of literacy and biliteracy needed to be academically successful.

Typically, this something extra has taken the form of pullout compensatory programs designed to remediate the student's academic weaknesses. Pullout programs for language minority and majority students, largely funded through Chapter 1 programs in local elementary schools, have been widely criticized during the past few years (Allington & Broikou, 1988; Barrera, 1989; Hornberger, 1992). This criticism asserted that students continue to participate in remedial programs year after year. There is little evidence to suggest that student achievement improves as a result of participation in these programs (Allington & Broikou, 1988; Barrera, 1989). Further, compensatory programs become life sentences for students; once they get in, they never get out.

An additional problem for language minority students in need of some sort of remediation, particularly in literacy, is that the remediation is often offered in English whether or not the child has a sufficient command of it to benefit from such instruction. This approach to remediation often creates a situation where the child may be receiving formal reading instruction in Spanish (or another native language) in the regular classroom, and English reading instruction for remediation, a situation that may well result in further confusion and failure for the child (Barrera, 1989).

Added to this is the overall problem that 95 percent of the bilingual programs for language minority students in the United States are transitional in nature. Their stated purpose is to transfer students from native language to English language programs as quickly as possible (Fradd & Tikunoff, 1987). This transitional policy exacerbates difficulties for language minority students who may be struggling to learn to read in their native language. Teachers often feel pressured to get students into English reading, so they give up trying to help students become literate in their first language and simply teach in English.

Given these factors and the research results establishing the efficacy of native language programs, there is a real need to look at innovative early intervention programs that are offered in the native language of the students. Native language programs may be the best vehicle to assist language minority children struggling with literacy acquisition. At the same time, it is important that such programs not condemn these children to a lifetime of remedial instruction.

One educational intervention that focuses its efforts on helping English-speaking students who are struggling to learn to read is Reading Recovery. Briefly defined, Reading Recovery is a first grade intervention program designed to identify and remediate reading difficulties early in a child's school career. Children in Reading Recovery receive intensive individual instruction by specially trained teachers. The purpose of Reading Recovery is to cycle children as quickly as possible into and out of intervention and back into a basic classroom experience. Reading Recovery was developed and implemented in New Zealand and has recently been implemented throughout the United States and in Australia, Canada, and Great Britain. Reading Recovery has met with great success in areas where it has been implemented (Clay, 1989; Pinnell, 1988; Pinnell, Fried, & Estice, 1990). So great is its success in the U. S., that in 1992 there were Reading Recovery programs in thirty-four states and the District of Columbia (Dyer, 1992). It would seem that Reading Recovery, given its success with English-speaking students, might also be effective when applied in Spanish with Spanish-speaking students. However, there is a need to examine this notion beyond the point of theoretical supposition.

In 1988, bilingual education staff at a large urban school district in Southern Arizona made the commitment to develop and study the application of Reading Recovery in Spanish. This project was given the name Descubriendo La Lectura (DLL) and is an adaptation of Reading Recovery. It is equivalent in all major aspects to the program originated by Marie Clay in New Zealand.

The study reported herein is an examination of one aspect of the DLL program which entails an examination of the notion of acceleration as defined by English Reading Recovery. In English Reading Recovery, acceleration is one of the theoretical underpinnings of the program. The theory of acceleration suggests that it is possible to take students who are struggling in their efforts to become literate, and through a specific, intensive one-to-one instructional program, provide the something extra that the child needs to accelerate from struggling to average. Struggling generally refers to those children who are at the lowest 20 percent in their class with regard to literacy, and average refers to literacy levels of other students in a school. Reading Recovery provides measures to observe student literacy development that can be used, along with teacher judgment, to identify children who are struggling as well as those who are average. These same measures can be used to observe student growth across time.

The study examined the initial impact of DLL on twenty-three students who participated in the program during 1991-92, and examined whether these children accelerated from struggling to average. This study should be viewed as a beginning effort and the reader should note that the data not only provide valuable information about the initial impact of DLL on students, but also will serve as a baseline for future longitudinal studies which will assess the impact of this program across grade levels and examine the extent to which gains made in Spanish literacy subsequently apply to the acquisition of English literacy.

From a theoretical standpoint, this study is significant for several reasons. First, it utilizes the knowledge base and theoretical framework from two important fields (bilingual education and Reading Recovery) for the purpose of addressing a large and growing need in our country. This need is how to assist Spanish-speaking children who are having difficulty learning to read without prematurely submersing them in English and without permanently placing them in classes for slow learners.

The projected growth of Spanish-speaking students in U. S. schools is 35 percent over the next decade (Lyons, 1991). This, coupled with the continued overrepresentation of these students in remedial programs, makes studies such as this one significant for policymakers and practitioners. Moreover, these studies are imperative if the academic potential of Spanish-speaking students in our country is to be realized.

Reading Recovery: An Overview

Reading Recovery (RR) is designed to assist first grade students who are having difficulties learning to read. Students identified as needing Reading Recovery are pulled out of their classrooms for intensive one-to-one instruction for thirty minutes per day. Reading Recovery differs from other remedial programs in several significant ways. First, the intent of the program is to accelerate struggling students so that they can catch up with their peers. The program is not intended to take the place of good classroom instruction but is seen as providing the something extra that is needed to provide struggling readers with the inner control needed to become independent readers. The program is designed to be short-term and to cycle students into and out of the program as quickly as possible. Average student participation in Reading Recovery is twelve to sixteen weeks (Clay, 1989; Pinnell, 1990). Reading Recovery is delivered by a trained teacher and RR teachers undergo an intensive one year training program to learn Reading Recovery theory and procedures. As they learn the theory, they simultaneously apply these procedures with children under the guidance of a teacher leader and the support of a peer training group.

Reading Recovery lessons follow a similar structure. However, there are no prescribed step-by-step kits or consumable materials. Trained teachers select and use a wide range of books. Lessons are designed to actively involve children in their own learning. Children are guided to think and solve problems while reading. Teachers provide support, but the children do the work and solve problems. Daily writing and using children's writing to teach reading are important aspects of RR (Pinnell, DeFord, & Lyons, 1988).

Reading Recovery programs have demonstrated that children can accelerate their reading progress in this program and that their reading progress can sustain itself across grade levels (Clay, 1989; Pinnell, 1990). Thus, once students are successfully discontinued from RR programs, their gains are maintained without the need for further remediation.

Research results on the impact of English RR have been very promising. Results of the original program developed by Marie Clay in New Zealand (Clay, 1979a, 1979b, 1982) indicated that children who had been identified as RR students made accelerated progress while receiving individual tutoring. After an average of 12-14 weeks, almost all children in the initial program had caught up with their peers who were considered to be average readers. Three years later, children who had received RR continued to progress at average rates. Although the initial research group in New Zealand included bilingual Maori children, bilingual Pacific Island children, children whose ancestry was European, and children with special needs, it is important to note that RR, in its inception, was conducted exclusively in English. Since that time, however, RR has also been developed in Maori (M. M. Clay, personal correspondence, May, 1992).

Programs implemented in the United States have reported similar results. During the 1984-85 school year, a U. S. program was piloted in Ohio. The program was implemented in six urban schools with high proportions of low income students. Fifty-five students received RR during the pilot year, with an average of twelve weeks of intensive tutoring. At the end of the pilot year, two-thirds of the children were substantially above comparison group students on standardized tests. Further, students were within the average range of achievement based on national norms of the Stanford Achievement Test (Huck & Pinnell, 1985). Follow-up studies conducted during the years 1985 to 1987 found that RR children maintained their gains over comparison children and continued to perform within the average level two years after discontinuing RR (DeFord, Pinnell, Lyons, & Young, 1987). By 1988, the Ohio project had expanded to serve 3,000 children in 143 school districts. In essence, the RR program helped underachieving students make rapid gains in reading by fostering student independence and enabling them to continue to do well after completing the program.

The success of RR programs in English, particularly with low-income students in Ohio and bilingual Maori students in New Zealand, prompted the development of a program in Spanish. Development began in the 1988-89 school year with funds from an Arizona district's Chapter 1 office. The district's decision to develop a Spanish RR program was influenced by several other factors. First, the district has a large and extensive population of language minority students who are receiving initial literacy instruction in Spanish in Tucson. This population includes first grade students who need extra assistance in initial literacy acquisition.

Second, the district has a formal language policy that establishes maintenance of two languages and development of bilingualism and biliteracy as fundamental educational goals for all district language minority students (District Policy 1110, 1981). Development of a RR program in Spanish was deemed the most theoretically sound approach given the research in bilingual education that had found the use of the child's native language to be the most appropriate medium of instruction (Cummins, 1989; Krashen & Biber, 1988; Ramírez, Yuen, & Ramey, 1991), and the research in RR which emphasized children's competence and not their deficits (Clay, 1989; Pinnell, 1990).

The Development of Descubriendo La Lectura

There are numerous considerations to be addressed when adapting an English language program for students from other cultural and linguistic groups. For Descubriendo La Lectura (DLL), such issues included differences in language and culture between Spanish-speaking students and their English-speaking counterparts, as well as the need to reconstruct all program components into Spanish.

Initial program development included the identification of children's literature books in Spanish for use in the program, the development of a Spanish Observation Survey, and the training of three Spanish-speaking Reading Recovery/Descubriendo La Lectura teachers. Currently, the program has over 300 children's literature books in Spanish which are written at 28 different levels of difficulty. In Spanish, as in English, the inventory of books provides the reading material for DLL, but does not recommend sequence.

The Spanish Observation Survey (*El Instrumento de Observación del Desarrollo Literato Principiante*) was created for use in the DLL program as a reconstruction of the English Observation Survey originated by Clay (1989). Studies conducted by Escamilla and Andrade (1992), and Escamilla, Basurto, Andrade, and Ruíz (1992) found the Spanish reconstruction to be valid and reliable. The Spanish Observation Survey consists of six observational tasks that collectively provide a profile of a student's reading repertoire. These observational tasks include: (a) letter identification, (b) word test, (c) concepts about print, (d) writing vocabulary, (e) dictation, and (f) text reading.

While the Spanish DLL program was being created, it was simultaneously being field tested with students. Case study results of the field testing included 14 students (2 in 1989-90 and 12 in 1990-91). Results of this field testing demonstrated that DLL, like RR, was having a positive impact on students (Escamilla & Andrade, 1992; Escamilla, Basurto, Andrade, & Ruíz, 1992). Positive results from these studies led to the expansion of the DLL program to serve more students, involve more teachers in the training program, and expand the research efforts which resulted in this study.

Research Questions

The purpose of this study was to examine whether the Descubriendo La Lectura Program achieved acceleration with Spanish-speaking first grade students in a manner equivalent to English Reading Recovery programs in New Zealand and Ohio. As stated above, acceleration implies movement from being a struggling reader to being an average reader. Research questions generated for the study were:

1. How do DLL, control, and comparison children compare at the end of first grade on a variety of measures of reading ability?
2. How do DLL, control, and comparison children perform at the end of first grade on a nationally normed, standardized test?
3. How do DLL, control, and comparison children compare with the average progress of the total population of first grade students?
4. What proportion of successfully discontinued DLL students achieved end-of-year scores equivalent to the average band of first grade students who are reading in Spanish?

Methods and Subjects

Subjects for the study were 180 first grade, Spanish dominant students who attended school in a large urban Southern Arizona school district. Subjects included all Spanish-speaking, first grade students from six elementary schools who were receiving their initial literacy instruction in Spanish. Students were identified as being Spanish dominant on the basis of the Home Language Survey administered by the school district in September, 1991, and the Language Assessment Scales (LAS) test which was administered in both Spanish and English in October, 1991. Mean scores for all subjects on the LAS test were 3.9 in Spanish and 1.5 in English (the LAS is scored on a 5-point scale). These results clearly indicated that study subjects were dominant Spanish speakers and very limited in English.

In October, 1991, all 180 students were given the Spanish Observation Survey reconstructed for DLL and the Aprenda Reading Achievement Test (Nivel *Preprimario* – Subtests 2, 3, 4, and total reading). From these data for all six schools in the study, students who were in the bottom 20 percent were identified. Four of the schools had the DLL program and two did not. For the four schools with the DLL program, study subjects were chosen by using the results of the Spanish Observation Survey in combination with teacher recommendations as to which students were most in need of DLL. Teacher recommendations were documented via a procedure known as alternate ranking.

In alternate ranking, a teacher takes a copy of his or her class list and ranks the students according to his or her perceptions of student reading abilities. Teachers begin by identifying the strongest reader and ranking the child #1 and then identifying the weakest reader and ranking that child with the lowest class number. The procedure of alternate ranking (highest/lowest) continues until all students in the class have received a rank.

DLL subjects were those who received the lowest class ranking by their teachers and had the lowest scores on the Spanish Observation Survey. A total of 50 students were identified as DLL students for 1991-92. Of this total, 23 received the program.

In order to control for treatment effects that might result from having DLL trained teachers in regular classroom situations, control group students were chosen from two schools that had no DLL teachers nor a DLL program. Control group students were also selected on the basis of the results on the Spanish Observation Survey and the Aprenda Spanish Reading Achievement Test and were identified as being in the lowest 20 percent of their class. From this group, 23 control group students were identified. These students were children who could have benefited from the DLL intervention, but did not receive it.

From the six schools in the study, all students not identified as DLL or control group students were assigned to the comparison group ($n = 134$). All 180 study children (DLL, control, and comparison) were retested in May, 1992, using the Spanish Observation Survey and the Aprenda Spanish Reading Achievement Test (Nivel *Primer Nivel Primario* — Subtests 2, 3, and total reading).

For Research Question 1, all subjects were given the Spanish Observation Survey during October, 1991, and May, 1992. Mean pre and post-observation scores were compared for the three groups.

For Research Question 2, pretest and posttest results for DLL, control, and comparison group students on the Aprenda Spanish Reading Achievement Test were compared. Analyses utilized scores for the total reading. Because different forms of the test were used from the fall to the spring, (fall – Nivel *Preprimario;* spring – Nivel *Primer Nivel Primario*) student raw scores were converted to scaled scores for comparison and analysis. A t test was then used to analyze the significance of the difference between groups. The fall form of the Aprenda has three subtests of reading (*sonidos y letras* – sounds and letters, *lectura de palabras* – word reading, and *lectura de oraciones* – reading sentences). The spring form has only two forms (*lectura de palabras* – word reading and *comprehensión de lectura* – reading comprehension). For purposes of analyses, only total reading achievement test scores for each form were used.

Research Question 3 analyzed the reading progress of DLL, control, and comparison children compared to the average progress of the total group of first grade Spanish-reading students for the 1991-92 school year. Comparisons were made by analyzing October and May gains on tasks on the Spanish Observation Survey and on the Aprenda Spanish Achievement Test (total reading fall and spring). Average progress was considered to be ± .5 standard deviations from the mean of the total group (DLL+control+comparison). Comparisons were made for each of the observation tasks on the Spanish Observation Survey and for the total Aprenda Spanish Reading Achievement Test.

Research Question 4 was analyzed by calculating the percentage of DLL students who met and/or exceeded the end-of-year average band of achievement among all first grade students reading in Spanish. The average band was calculated for all six observation tasks of the Spanish Observation Survey and was calculated using the same method used for Research Question 3. Descubriendo La Lectura students included all students completing at least 60 DLL lessons including successfully discontinued and not-discontinued students.

Results

For Research Question 1, all subjects were given the Spanish Observation Survey during October, 1991, and May, 1992. Mean pre and post-observation scores were compared for the three groups and are presented for each group on Table 1.

All three groups made gains from the pretest to the posttest on all observation tasks. To test the significance of the difference in gains between the three groups, a *t* test for significance was applied. Results of the *t* tests are presented in Table 2.

In the fall of 1991, there were significant differences between the DLL group and the comparison group on all six observation tasks ($p < .001$). Further, these differences were statistically significant on all tasks with the comparison group showing significantly higher scores on all six tasks. By May, the DLL group had not only caught up to the comparison group, but had surpassed them. May, 1992 results showed the DLL students outperformed comparison students on all six observation tasks. Further, these differences were statistically significant ($p < .05$) on all observation tasks except text reading.

Differences between the DLL group and the control group were not significant on the Spanish Observation Survey during the fall on three tasks, but were significant on three others. Tasks with significant differences included Word Test ($p < .05$), Concepts about Print ($p < .05$), and Dictation ($p < .001$). These differences favored the control group who had started ahead of the DLL group on all measures. Spring results, however, indicated that there were statistically significant differences between the DLL and control group on all six observation tasks. The DLL group significantly outperformed the control group ($p < .05$) on all measures.

Between group comparisons for the control and comparison groups showed that in the fall of 1991, there were statistically significant differences between the two groups on each of the observation tasks ($p < .01$). During the fall, the performance of the comparison group was statistically superior to the control group. However, during the spring of 1992, results indicated that while the mean scores for the comparison group were still above those of the control group for all six observation tasks, these differences were not statistically significant. Both groups made gains. However, the control group did not catch up to the comparison group and the DLL group did.

Research Question 2 examined the differences between the DLL, control, and comparison groups on a standardized test of reading achievement. For this comparison, the Aprenda Spanish Achievement Test was used. All three groups took this test in October, 1991, and May, 1992. Between October, 1991, and May, 1992, comparisons were made on the total reading (*lectura* total) scores.

For this comparison, student raw scores were converted to standard scores and percentiles. Standard scores and percentiles for the DLL, control, and comparison groups are presented on

Table 1

Means and Standard Deviations for Descubriendo La Lectura (DLL) Children, Control Group Children, and Comparison Group Children

		*DLL Children n=23		Control Group Children n=23		Comparison Group Children n=134	
Observation Task	Month	mean	SD	mean	SD	mean	SD
Letter Identification (Max=61)	September	18.9	12.9	24.0	11.78	33.4	17.0
	May	54.7	8.8	47.6	13.3	49.1	13.5
Word Test (Max=20)	September	0.0	0.0	0.3	0.69	3.6	5.6
	May	15.9	6.1	10.3	7.56	11.7	8.0
Concepts About Print (Max=24)	September	6.0	2.9	8.3	2.98	10.7	3.7
	May	16.0	3.4	12.7	3.5	14.3	4.1
Writing Vocabulary (10 Minutes)	September	3.0	1.8	4.6	3.49	9.7	10.8
	May	48.5	14.5	25.7	18.8	32.7	20.8
Dictation (Max=39)	September	2.6	4.0	9.3	13.9	16.2	11.5
	May	33.8	6.5	25.6	14.2	29.1	10.4
Text Level Reading (Max=28)	September	1.6	.95	1.6	0.99	3.6	3.8
	May	13.9	8.6	6.2	5.2	11.4	9.6

*Includes both successfully discontinued and not-discontinued program children who received at least 60 DLL lessons.

Table 3. Standard scores for all three groups were higher in May than October. However, when the standard scores were connected to percentiles, only the DLL group and the control group made gains. The DLL group went from the 28th percentile to the 41st percentile while the control group went from the 26th to the 28th percentile. The comparison group dropped from the 35th to the 31st percentile. If one considers the 50th percentile to be an indicator of a national average, it is important to note that the DLL group is the only group approaching this national average.

Research Question 3 examined how DLL, control, and comparison group children compared to the average progress of all first grade students. This comparison was made using the six observation tasks of the Spanish Observation Survey and the Aprenda Spanish Reading Achievement Test-Total Reading Score. For each of the measures, the average band was calculated from the mean and standard deviation. The average band was considered to be ± .5 standard deviations from the mean. For the six observation tasks on the Spanish Observation Survey student raw scores were used to calculate average. For the Aprenda Spanish Reading Achievement Test scaled scores were used. This procedure for determining whether student progress was average was the same method used at The Ohio State University when studying the impact of reading on English-speaking students (DeFord, Pinnell, Lyons, & Young, 1987).

Tables 4 through 9 illustrate the gains made by each study group for each of the measurement criteria. Gains for each group are compared to the band of what is considered average progress.

Table 2

t Values and Levels of Significance for DLL, Control, and Comparison Group Children on Spanish Observation Survey

Observation Task		DLL/ Control	DLL/ Comparison	Control/ Comparison
Letter Identification	Fall	1.40	4.73*	3.29***
	Spring	2.13**	2.69**	0.5
Word Test	Fall	2.14**	7.5*	6.6*
	Spring	2.77**	2.89***	0.81
Concepts About Print	Fall	2.64**	6.81*	3.43***
	Spring	3.27***	2.09**	1.98
Writing Vocabulary	Fall	0.68	6.63*	4.32*
	Spring	4.60*	4.49*	1.62
Dictation	Fall	5.78*	10.54*	5.31*
	Spring	2.52	2.90	1.13
Text Reading	Fall	0.069	5.13*	5.13*
	Spring	3.67***	1.26	0.397

* $p < .001$
** $p < .05$
*** $p < .01$

Table 3

Aprenda Spanish Achievement Test Gain Scores for DLL, Control, and Comparison Groups

Group	Fall 1991		Spring 1992		Gain (In Percentile Points)
	Mean Scaled Score	Percentile	Mean Scaled Score	Percentile	
DLL Group	455	28th	521	41st	+13
Control Group	453	26th	503	28th	+ 2
Comparison Group	460	35th	508	31st	- 4

By the spring testing dates DLL students had reached the average band on all measurement criteria. On one task (writing vocabulary), the spring mean for DLL students was above the average band. This is interpreted as an indication that DLL students have accelerated to a level of average according to these criteria, and are demonstrating that the theory of student acceleration in DLL programs can work in Spanish as well as in English. As with Research Questions 1 and 2, DLL students surpassed both control and comparison students in May on all criteria.

Table 4

Letter Identification Scores of Total DLL Group, Control, and Comparison Groups Compared with Average Band of First Grade Spanish-Speaking Children

	DLL mean	Control mean	Other mean
Fall	18.9	24	33.4
Spring	54.7	47.6	49.1

Average band = ± .5 standard deviations from *mean*
mean = 49.8 (Average band = 43.2 – 56.4)
Letter Identification (61 total)

Table 5

Word Test Scores of Total DLL Group, Control, and Comparison Groups Compared to the Average Band of First Grade Spanish-Speaking Children

	DLL mean	Control mean	Other mean
Fall	0.0	.3	3.6
Spring	15.9	10.3	11.7

Average band = ± .5 standard deviations from *mean*
mean = 12.2 (Average band = 8.2 – 16.2)
Word Test (20 total)

Table 6

Concepts About Print Scores of Total DLL Group, Control, and Comparison Groups Compared to the Average Band of First Grade Spanish-Speaking Children

	DLL mean	Control mean	Other mean
Fall	6.0	8.3	10.7
Spring	16.0	12.7	14.3

Average band = ± .5 standard deviations from *mean*
mean = 14.5 (Average band = 10.4 – 16.6)
Concepts About Print (24 total)

Table 7

Writing Vocabulary Scores of Total DLL Group, Control, and Comparison Groups Compared to the Average Band of First Grade Spanish-Speaking Children

	DLL mean	Control mean	Other mean
Fall	3.0	4.6	9.7
Spring	48.5	25.7	32.7

Average band = ± .5 standard deviations from *mean*
mean = 34.7 (Average band = 24.3 – 45.1)
Writing Vocabulary (10 minute limit)

Table 8

Dictation Scores of Total DLL Group, Control, and Comparison Groups Compared to the Average Band of First Grade Spanish-Speaking Children

	DLL mean	Control mean	Other mean
Fall	2.6	9.3	16.2
Spring	33.6	25.6	29.1

Average band = ± .5 standard deviations from *mean*
mean = 29.1 (Average band = 24.6 – 34.8)
Dictation (39 total)

Table 9

Text Reading Scores of Total DLL Group, Control, and Comparison Groups Compared to the Average Band of First Grade Spanish-Speaking Children

	DLL mean	Control mean	Other mean
Fall	1.6	1.6	3.6
Spring	13.9	6.2	11.4

Average band = ± .5 standard deviations from *mean*
mean = 11.7 (Average band = 6.9 – 16.5)
Text Reading (28 maximum)

Control and comparison students, on the other hand, also made progress from fall to spring. Control group students reached the average band of progress on five out of six of the observation tasks and comparison students were in the average band on all observation tasks. However, progress of both groups lagged behind the DLL group at statistically significant levels.

Research Question 4 examined the proportion of DLL students who successfully achieved end-of-year scores on measures of Spanish reading that were equivalent to the average band. In other words, aside from the mean for all students in the DLL group, it was determined how many actually accelerated into the average group on all measures. For this question, the Spanish Observation Survey was once again utilized. For the twenty-three children who participated in the DLL program, each of their scores on the May, 1992, observation tasks was compared to the average band scores used for Research Question 4. The number of students achieving average scores for each observation task was then noted. After all scores were calculated, the percentage of DLL students achieving in the average range was calculated. Scores and percentages are presented in Table 10. Twenty-one of the 23 DLL students (91 percent) achieved end-of-year scores on all six observation tasks that either equaled or exceeded the average. This result is interpreted as another indicator that the DLL program is achieving student acceleration and is positively impacting program students.

Table 10
Numbers and Percentages of Descubriendo La Lectura Children in End-of-Year Average Band

Measure	Average Band	Met or Exceeded		Met or Exceeded	
		Number	%	Number	%
Letter Identification (61 total)	43.2 – 56.4	21	91%	2	9%
Word Test (20 total)	8.2 – 16.2	21	91%	2	9%
Concepts about Print (24 total)	10.4 – 16.6	22	96%	1	4%
Writing Vocabulary (10 minutes)	24.3 – 45.1	21	91%	2	9%
Dictation (39 total)	24.6 – 34.8	22	96%	1	4%
Text Reading (28 total)	6.9 – 16.5	17	74%	6	26%

Note. This group includes both successfully discontinued and not-discontinued program children who received at least 60 DLL lessons.

Discussion

The data reported establish that the DLL program achieved acceleration with Spanish-speaking students who were struggling while learning to read in Spanish. Its impact on students could be interpreted to be positive as DLL program students made significant gains in their literacy acquisition during the course of this project. Further, these gains were significant when compared to a control group of children who were also struggling in Spanish literacy, but did not have the DLL program. Fall and spring differences between the DLL and control group students were significant on all measurement criteria. Even more significant was the fact that DLL student learning growth surpassed that of a comparison group of first grade students learning to read in Spanish. The comparison group consisted of students who were not in the lower 20 percent of their class (all were above that level). Fall and spring differences between the DLL and comparison groups were also significant on all measurement criteria. These findings are seen as evidence to support the theory that Descubriendo La Lectura, like Reading Recovery, can help students who are struggling to learn to read in a relatively short period of time (12-16 weeks). Further, the program accelerates the students to the point of being on par with average readers in a class. In fact, on all measurement criteria used in the study, DLL students not only caught up with their average peers, but surpassed them at statistically significant levels. While this finding is greatly encouraging for DLL students, it raises some concerns with regard to the quality of Spanish reading instruction for children in the regular bilingual classrooms. The overall instructional program in Spanish literacy is one that merits further study and consideration.

While the research is positive relating to the potential of the DLL program in Spanish, it must be emphasized that this project involved only twenty-three students. Additional data need to be collected at other sites and with other cohorts of students in order to provide additional evidence as to the initial effectiveness of the program in Spanish. These data, however, provide evidence that the program has been highly effective with the children who were involved.

Of equal importance is the extent to which children involved in this program will be able to sustain the initial benefits of the program as they move on to other grade levels and as they make the transition from reading in Spanish to reading in English. These twenty-three children will become the first data bank for a longitudinal study that will examine the sustaining effects of DLL across grade levels and the transfer of DLL strategies from Spanish to English. It can be concluded, however, that initial results of this study with this group of children demonstrated that the program has a great deal of promise in assisting children who are struggling to become literate.

References

Allington, R., & Broikou, R. (1988, April). Development of shared knowledge: A new role for classroom and specialist teachers. *The Reading Teacher, 41*, 806-821.

Aprenda-Technical Data Report. (1991). The Psychological Corporation. San Antonio: Harcourt Brace Jovanovich.

Barrera, R. (1989, January). *Issues related to pullout and remedial programs and student achievement: A review of the research*. Symposium presented at the University of Arizona (R. Barrera, chair), Tucson.

Brown, A. (1992, April). Building community support through local education funds. *NABE News, 15*(4-5), 11-26.

Clay. M. (1979a, 1985). *The early detection of reading difficulties* (3rd ed.). Auckland, NZ: Heinemann.

Clay, M. (1979b). *Reading: The patterning of complex behavior*. Auckland, NZ: Heinemann.

Clay, M. (1982). Reading Recovery: A follow-up study. In M. Clay (Ed.), *Observing young readers: Selected papers*. Exeter, NH: Heinemann.

Clay, M. (1989). Concepts about print in English and other languages. *The Reading Teacher, 42*, 268-276.

Cummins, J. (1989). *Empowering minority students*. Sacramento: California Association for Bilingual Education.

DeFord, D., Pinnell, G., Lyons, C., & Young, P. (1987). *Report of the follow-up studies: Vol. 7 Columbus, Ohio, Ohio Reading Recovery Project 1985-86 and 1986-87*. Columbus: The Ohio State University.

District Policy 1110: Bilingual/bicultural education. (1981, March). Tucson: Tucson Unified School District.

Dyer, P. (1992). *Reading Recovery: A cost-effectiveness and educational outcomes analysis.* Arlington, VA: Educational Research Service.

Escamilla, K. (1987). *The relationship of native language reading achievement and oral English proficiency to future achievement in reading English as a second language.* Unpublished doctoral dissertation, University of California, Los Angeles.

Escamilla, K., & Andrade, A. (1992). Descubriendo La Lectura: An application of Reading Recovery in Spanish. *Education and Urban Society, 24,* 212-226.

Escamilla, K., Basurto, A., Andrade, A., & Ruiz, O. (1992, January). *Descubriendo La Lectura: A study of methods of assessing and identifying the reading needs of Spanish-speaking first grade students.* Paper presented at the National Association for Bilingual Education Conference (NABE), Albuquerque.

Fradd, S., & Tikunoff, W. (1987). *Bilingual education and bilingual special education: A guide for administrators.* Boston: College Hill.

Hakuta, K. (1987). *Mirror of language.* New York: Basic Books.

Hornberger, N. H. (1992). Bi-literacy contexts, continua, and contrasts: Policy and curriculum for Cambodian and Puerto Rican students in Philadelphia. *Education and Urban Society, 24,* 196-211.

Huck, C., & Pinnell, G. (1985). *The Reading Recovery project in Columbus, Ohio: Pilot year 1984-85* (Technical Report). Columbus: The Ohio State University.

Krashen, S., & Biber, D. (1988). *On course: Bilingual education's success in California.* Sacramento: California Association for Bilingual Education.

Lyons, J. (1991, May). The view from Washington. *NABE News, 14*(5), 1.

Pinnell, G. (1988). Holistic ways to help children at risk of failure. *Teachers Networking – The Whole Language Newsletter, 9*(1), 3.

Pinnell, G. (1990). Success for low achievers through Reading Recovery. *Educational Leadership, 48*(1), 17-21.

Pinnell, G., DeFord, D., & Lyons, C. (1988). *Reading Recovery: Early intervention for at-risk first graders.* Arlington, VA: Educational Research Service.

Pinnell, G., Fried, M., & Estice, R. (1990, January). Reading Recovery: Learning how to make a difference. *The Reading Teacher, 43*(4), 282-295.

Ramírez, D., Yuen, S., & Ramey, D. (1991). *Executive summary, final report: Longitudinal study of structured English immersion strategy, early-exit and late-exit transitional bilingual programs for language minority children* (Contract No. 300-87-0156). San Mateo, CA: Aguirre International.

DESCUBRIENDO LA LECTURA: UN PROGRAMA EN ESPAÑOL DE LECTO-ESCRITURA PARA LAS PRIMERAS ETAPAS

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Significado y Necesidad

Al presente existen como 7.5 millones en edad escolar en los Estados Unidos que comienzan la escuela hablando un idioma que no es el Inglés. El 70% de estos 7.5 millones hablan Español como su primera lengua. El número de los hispanoparlantes que entran a las escuelas de los Estados Unidos ha estado creciendo durante los últimos 10 años. Estos estudiantes constituyen el grupo que está creciendo más rápido en las escuelas públicas de los Estados Unidos. Durante los últimos 20 años, los programas de educación bilingüe han sido implementados para ofrecer una educación de buena calidad para estudiantes de habla Hispana, los cuales también son considerados como estudiantes de grupos minoritarios. La educación bilingüe en los Estados Unidos ha creado mucha controversia. Sin embargo las investigaciones nos indican que los programas bilingües son efectivos cuando tienen un cuerpo docente bien capacitado junto con buen apoyo administrativo.

Aunque los programas bilingües en los Estados Unidos son implementados de diferente manera, usualmente utilizan la lengua materna del estudiante para desarrollar la alfabetización inicial y gradualmente agregan el Inglés como una segunda lengua. Este modelo ha demonstrado que el éxito inicial en la lengua materna ofrece una base para tener éxito más tarde en el Inglés.

A pesar de estos logros que ya han sido demonstrados y todo el impacto positivo que se ve en la educación bilingüe, todavía hay muchos estudiantes que no hablan Inglés y que no han podido hacer los progresos necesarios ni en su lengua materna ni en una segunda lengua. Estos estudiantes, como sus compañeros de habla Inglesa, están teniendo tantas dificultades en las primeras etapas de la lecto-escritura, que se requiere una atención especial o *algo extra* en su instrucción para que puedan desarrollar las habilidader de lecto-escritura necesarias para tener éxito en la escuela.

Tipicamente, lo extra que es necesario se ha trabajado en la forma de programas denominados *pull-out* (los estudiantes dejan su aula para asistir a una clase de lectura en otra aula), que son programas compensatorios para mejorar las debilidades académicas de los participantes. Estos programas *pull-out* para estudiantes que no hablan Inglés son parte del programa Capítulo 1 en las escuelas primarias, y han sido muy críticados durante los últimos años (Allington & Broikou, 1988; Barrera, 1989; Hornberger, 1992). Esta critica mantiene que los estudiantes que continuan participando en estos programas año tras año demuestran pocos logros como resultado de esa participación (Allington & Broikou, 1988; Barrera, 1989). Además, los programas compensatorios son como una sentencia mortal para los participantes, ya que siendo admitidos al programa, nunca pueden salir.

Otro problema para los estudiantes que no hablan Inglés y que necesitan algun tipo de ayuda, particularmente en la lecto-escritura, es que esta ayuda normalmente es en Inglés, sin importar que el estudiante pueda o no funcionar en Inglés. Este método de enseñanza crea situaciones en donde es posible que el niño esté recibiendo enseñanza en Español o en otra lengua en su salón, y esté trabajandola lectura en Inglés en el programa del Capítulo 1. Esta enseñanza que se presenta como una ayuda crea una situación que tal vez resulte en una confusión para el estudiante y no le ayude a tener éxito.

Adémas de lo mencionado en el último párrafo, tenemos el problema que el 95% de los programas bilingües en los Estados Unidos para estudiantes que no hablan Inglés son programas de transición. El propósito de estos programas es cambiar al estudiante, tan pronto sea posible, de programas que usan la lengua del estudiante para la enseñanza, a programas que enseñan solamente en Inglés (Fradd & Tikunoff, 1987). Esta regla de transición crea más dificultades para el estudiante que no habla Inglés, mientras está luchando por tratar de aprender a leer en su lengua. Los maestros en estos programas frecuentemente se sienten obligados a cambiar a los estudiantes a que lean en Inglés aunque no estén listos para ello. Estos maestros, por enséñarles en Inglés, dejan de prestar ayuda a los estudiantes en la lecto-escritura de su primera lengua. Dados estos elementos y los resultados de investigación que establecen la eficacia de los programas en la lengua materna, existe unagran necesidad de explorar programas innovadores de intervención temprana que se puedan ofrecer en la lengua materna del estudiante. Es posible que los programas de enseñanza en la lengua del estudiante, más que en Inglés, sean el mejor vehículo para enseñar al niño que habla otra lengua cuando está tratando de adquirir la lecto-escritura. Al mismo tiempo, es importante que estos programas no condenen a los niños a una cadena perpetua de ayuda educativa.

Una intervención educativa que está enfocada a ayudar a estudiantes de habla Inglesa que están teniendo dificultades al aprender a leer se llama *Reading Recovery*. Brevemente definido, *Reading Recovery* es un programa de enseñanza para estudiantes de primer año que identifica y remedia tempranamente en la carrera escolar del niño las dificultades que el estudiante encuentra en la lectura. Los estudiantes en el programa Reading Recovery reciben una instrucción individual intensiva por medio de maestros que están especialmente capacitados en este programa. El propósito de Reading Recovery es que el estudiante pase por un programa de enseñanza individual y regresar a ese estudiante, tan pronto sea posible, a su salon de clases, sin que tenga ya mas necesidad del programa individual. Reading Recovery fue desarrollado e implementado en Nueva Zelanda, y recientemente ha sido implementado en los Estados Unidos por distritos escolares en el estado de Ohio en colaboración con la Universidad Estatal de Ohio. Reading Recovery ha tenido mucho éxito en las áreas en donde ha sido implementado (Clay, 1989; Pinnell, 1988; Pinnell, Fried, & Estice, 1990). Tan grande ha sido su éxito, que en 1992 existían programas de este tipo en 34 estados de la únion Americana y en el Distrito de Columbia (Dyer, 1992). Con el éxito que ha tenido con estudiantes de habla Inglesa, pudiera ser que Reading Recovery tuviera el mismo éxito en Español con estudiantes de habla Hispana. Sin embargo, hay una necesidad de examinar esta noción, más allá de aceptarla como una suposición teórica.

En 1988, el cuerpo docente de un programa bilingüe en un distrito escolar muy grande en el sur de Arizona, se comprometío a desarrollar y estudiar la aplicación de Reading Recovery en Español. Como ya se ha mencionado, a este proyecto se le otorgó el nombre de Descubriendo La Lectura (DLL), es una adaptación de Reading Recovery y equivale en todo sentido al programa originado por Marie Clay en Nueva Zelanda.

Este estudio entonces, es una prueba de uno de los aspectos del Programa DLL que incluye un analisis de la noción de aceleración en lectura tal y como está definida en Reading Recovery en Inglés. En el programa de Reading Recovery, la aceleración del progreso es uno de los puntos más importantes del programa. La teoría de la aceleración sugiere que es posible tomar a estudiantes que están teniendo dificultades en sus esfuerzos de mejorar su lecto-escritura, y por medio de un programa de segunda enseñanza específico e intensivo, se le puede proveer al estudiante ese *algo extra* que el estudiante necesita para acelerar su progreso de no poder leer bien, a leer como la mayoría de los estudiantes de su edad y de su nivel. El criterio de no poder leer como otros de la misma edad, generalmente se refiere a los estudiantes que están en el grupo del 20% más bajo en su clase en cuanto a la lecto-escritura. Leer como otros niños de la misma edad se refiere a leer al nivel de la mayoría de los estudiantes en la escuela. Reading Recovery proeorciona instrumentos para medir el desarrollo de la lecto-escritura que se pueden utilizar en combinación con la opinion del (la) maestro(a) para identificar a los estudiantes que necesitan una segunda enseñanza, así como también a los niños que leen igual que la mayoría de los estudiantes de la misma edad. Estos mismos instrumentos se pueden utilizar para observar otros logros o progresos al través del tiempo (longitudinalmente).

El estudio examina el impacto inicial que DLL causó en los 23 estudiantes que participaron en el programa durante el año de 1991-92, y evaluó si los participantes progresaron de un nivel de no poder leer bien, a leer en el mismo nivel que la mayoría de los otros estudiantes. Este estudio debe reconocerce como un esfuerzo inicial y el lector debe observar que estos resultados no solamente nos dan una valiosa información sobre el impacto inicial de DLL en los estudiantes participantes, sino que también servirá como línea base para un futuros estudios longitudinales que evaluaran el impacto de este programa a lo largo de todos los niveles escolares, y examinará hasta qué punto las ganancias logradas en la lecto-escritura en Español se pueden aplicar más tarde a la adquisición de la lecto-escritura en Inglés. Desde un punto de vista teórico, este estudio tiene mucho significado por varias razones. En primer lugar, usa el conocimiento básico y la estructura teórica de dos campos muy importantes (educacion bilingüe y Reading Recovery) con el propósito de atender una gran necesidad en los Estados Unidos. Esta necesidad es de cómo ayudar a estudiantes de habla Hispana que están teniendo dificultades aprendiendo a leer, sin que sean prematuramente incorporados a la enséñanza en Inglés y sin que sean puestos permanentemente en una clase para estudiantes de lento aprendizaje.

Se espera que el número de estudiantes de habla Hispana en la escuelas de los Estados Unidos crezca un 35% en la próxima década (Lyons, 1991). Esto, junto con la contínua sobrerepresentación de estos estudiantes en programas para estudiantes de lento aprendizaje, hace que estudios como éste animen a nuestros legisladores y educadores. Además, estos estudios son muy importante si el potencial académico de el (la) estudiante de habla Hispana de nuestro país ha de materializarse.

Una Explicación de Reading Recovery

Reading Recovery está diseñado para ayudar a estudiantes de primer año que están teniendo dificultades aprendiendo a leer. Los estudiantes que han sido identificados como aquellos que necesitan Reading Recovery son sacados de sus aulas escolares para recibir una instrucción intensa e individual por treinta minutos al día. Reading Recovery es diferente a otros programas remediales en varias formas significativas. Primero, el proposito del programa es el de acelerar a los estudiantes que están teniendo dificultades en la lectura, para que puedan alcanzar a sus compañeros. Este programa no pretende reemplazar la enseñanza de un buen salón de clases, sino que ofrece ese *algo extra* necesario para animar a los estudiantes que no leen bien, a que desarrollen el control interno necesario para convertirse en lectores independientes. El programa está diseñado para ser de corto plazo y poder incorporar y sacar a los participantes lo más rápido posible. Un estudiante pasa un promedio de 12 a 16 semanas en el programa de Reading Recovery (Clay, 1989; Pinnell, 1990). El programa Reading Recovery es implementado por un(a) maestro(a) capacitado(a) en el programa, y estos maestros deben participar en un adiestramiento intensivo por un año para aprender la teoría y procedimientos del programa. Mientras aprenden la teoría, aplican simultáneamente los procedimientos a niños que necesitan la ayuda bajo la guía de un(a) maestro(a) líder y con el apoyo de sus colegas del grupos de entrenamiento.

Las lecciones de Reading Recovery tienen una estructura similar. Sin embargo, no existe una norma fija, ni materiales especiales. Los maestros capacitados escogen y usan un sinnúmero de libros. Las lecciones están diseñadas para incluir activamente a los niños en su propio aprendizaje. Los niños reciben orientación para que piensen y resuelvan problemas mientras leen. Los maestros dan apoyo, pero los niños hacen el trabajo y resuelven los problemas. El niño escribe diariamente, y sus escritos se usan para enseñarle a leer. Este es un aspecto muy importante del programa Reading Recovery (Pinnell, DeFord, & Lyons, 1988).

El programa RR ha demonstrado que los niños pueden acelerar su progreso en lectura dentro de este programa, y que ese progreso puede mantenerse a lo largo de otros niveles escolares. Cuando los estudiantes terminan el programa RR, sus logros se mantienen sin necesidad de más enseñanza correctiva.

El impacto de los resultados de ciertas investigaciones ofrece mucho apoyo. Los Resultados del programa original, desarrollado por Marie Clay en Nueva Zelanda, indicaron que los niños que habian sido identificados como estudiantes RR progresaron aceleradamente mientras recibían tutorias individuales (Clay, 1979a, 1979b, 1982). Después de un promedio de 12 a 14 semanas, casi todos los niños habian alcanzado a sus compañeros y seles consideró como estudiantes que leian al nivel apropiado. Tres años más tarde, los estudiantes que habían recibido RR continuaron progresando al igual que sus compañeros. Aunque el grupo inicial que se investigó en Nueva Zelanda incluyó a estudiantes bilingües Maori, estudiantes bilingues de las Islas Pacíficas, estudiantes de descendencia europea, y estudiantes con necesidades especiales, es importante notar que RR, en el principio, se condujo exclusivamente en Inglés. No obstante, desde ese entonces RR también se ha implementado en Maori (M. M. Clay, comunicación personal, mayo, 1992).

Los programas implementados en los Estados Unidos han reportado resultados semejantes. Durante el año escolar 1984-85 uno de estos programas fue modelado en el estado de Ohio. El programa fue implementado en seis distritos escolares urbanos con un alto numero de estudiantes de bajos recursos. Cincuenta y cinco estudiantes recibieron RR durante ese año, con un promedio de doce semanas de enseñanza intensiva. Al final de ese primer año, dos tercios de los estudiantes habían sobrepasado sustantivamente a los estudiantes del grupo Comparación en pruebas estandarizadas. Más aún, los estudiantes habián demonstrado logros muy igual a las normas nacionales del *Stanford Achievement Test* (Huck & Pinnell, 1985). Otros estudios conducidos durante los años 1985 a 1987 encontraron que los estudiantes de RR mantuvieron sus logros arriba de los estudiantes de un grupo Comparación, y continuaron desempeñándose dentro del nivel promedio dos años después de haber dejado RR (DeFord, Pinnell, Lyons, & Young, 1987). Para 1988, el proyecto en el estado de Ohio había crecido y estaba ayudando a 3,000 estudiantes en 143 distritos escolares. En realidad, el programa RR ha ayudado a muchos niños que no leían al nivel adecuado a tener logros rápidos, al fomentar la independencia en cada estudiante y capacitándolos para seguir teniendo éxito después de haber completado el programa.

El éxito del programa RR en Inglés, particularmente con estudiantes de bajos recursos económicos en el estado de Ohio, y con estudiantes bilingües Maori en Nueva Zelanda, impulsó el desarrollo de un programa en Español. El desarrollo del programa en Español comenzó en el año escolar 1988-89 con fondos del Programa Chapter 1 del distrito escolar. La decisión del distrito escolar de desarrollar un programa RR en Español fue influida por varios otros factores. Primero, el distrito escolar tiene una población muy grande de estudiantes minoritarios que no hablan Inglés y que reciben en Español la enseñanza inicial en lecto-escritura. Este grupo incluye a estudiantes de primer año que necesitan ayuda extra en la adquisición inicial de la lecto-escritura. En segundo lugar, el distrito escolar tiene una política formal sobre idiomas que establece el mantenimiento de dos idiomas y el desarrollo del bilinguilismo y de la lecto-escritura en ambos idiomas como metas educativas fundamentales para todos los estudiantes del distrito escolar que no hablan Inglés (*District Policy 1110*, 1981). El desarrollo de un programa de RR en Español fue considerado el método más teóricamente apropiado según las investigaciones en educación bilingüe (Cummins, 1989; Krashen & Biber, 1988; Ramírez, Yuen, & Ramey, 1991) que han encontrado que el uso de la lengua materna del estudiante es el medio más apropiado para enseñar, y las investigaciones en RR que acentúan las destrezas del estudiante y no sus debilidades (Clay, 1989; Pinnell, 1990).

El Desarrollo de Descubriendo La Lectura

Hay numerosas consideraciones que se deben mencionar al adaptar un programa en Inglés para estudiantes de otras culturas y de otros grupos linguísticos. Para DLL estos tópicas incluyeron diferencias en lenguage y cultura entre los estudiantes de habla Hispana y los estudiantes de habla Inglesa, así como la necesidad de reconstruir todos los elementos del programa en Español.

El desarrollo inicial del programa incluyó la identificación de libros de literatura infantil en Español para ser usados en el programa, el desarrollo de un Instrumento de Observación en Español, y el entrenamiento de tres maestras que habláran Español para el programa RR/DLL. Actualmente, el programa cuenta con más de 300 libros en Español escritos en 28 diferentes niveles de dificultad. En Español, como en Inglés, el inventorio de libros proporciona el material de lectura para DLL, pero no recomienda cierto orden.

El Instrumento de Observación del Desarrollo de la Lecto-Escritura fue creado como una reconstrucción del English Observation Survey credo por Clay (1989) para ser utilizado en el programa DLL. Estudios realizados por Escamilla (1987) y por Escamilla, Andrade, Basurto, y Ruíz (1992) encontraron que la reconstrucción en Español tenía validez y confiabilidad. El Instrumento de Observación del Desarrollo de la Lecto-Estritura consiste de seis tareas de observación que juntas ofrecen un perfil del repertorio de lectura del estudiante. Las destrezas observadas son: (1) identificación de letras, (2) prueba de palabras, (3) conceptos acbeca del texto impreso, (4) vocabulario escrito, (5) dictado, y (6) lectura de textos.

Mientras que el programa en Español de DLL estaba siendo creado, simultaneamente se estaba probando con estudiantes. Los resultados de los estudios de caso de estas pruebas incluyeron a 14 estudiantes (2 en 1989-90 y 12 en 1991-92). Los resultados de estas pruebas demonstraron que DLL, como RR, estaba teniendo un impacto positivo en los estudiantes (Escamilla & Andrade, 1992; Escamilla, Basurto, Andrade, & Ruíz, 1992). Los resultados favorables de estas pruebas nos animaron a que ayudáramos a más estudiantes en el programa DLL, a que aumentáramos el número de maestros capacitados, y que expendiéramos los esfuerzos para investigar los resultados del estudio.

Preguntas de Investigación

El propósito de este estudio fue examinar si el programa de DLL estaba ayudando a los estudiantes de habla Hispana del primer año a acelerar su progreso de una manera equivalente al programa en Inglés de RR en Nueva Zelanda y en el estado de Ohio en los Estados Unidos. Como ya se ha mencionado, la aceleración implica que un estudiante ha mejorado, de no poder leer tan bien como la mayoría de sus compañeros, a leer al mismo nivel que ellos. Las preguntas de investigación para este estudio fueron las siguiente:

1. ¿Cómo se comparan los grupos DLL, Control, y Comparación al final del año en una variedad de medidas en la habilidad de leer?
2. ¿Cómo se desempeñan los grupos DLL, Control, y Comparación al final del primer año en una prueba nacional estandarizada?
3. ¿Cómo se comparan los grupos DLL, Control, y Comparación con el progreso promedio de la población total de estudiantes de primer año?
4. ¿Qué proporción de estudiantes que terminaran exitosamente en DLL demonstraron logros al final del año equivalentes, a la banda promedio de los estudiantes de primer año que leen en Español?

Método y Sujetos

Los sujetos del estudio fueron 180 estudiantes de primer año que hablaban Español como su lengua materna e iban a la escuela en un distrito escolar urbano y grande en el sur de Arizona. Se incluyó a todos los estudiantes de habla Hispana del primer año de seis escuelas primarias que estaban recibiendo enseñanza inicial en lecto-escritura en Español. Los estudiantes fueron identificados como estudiantes que hablaban Español mejor que otro idioma según el *Home Language Survey*, el cual fue administrado por el distrito escolar en septiembre de 1991, y la prueba *Language Assessment Scales* (LAS) que fue administrada en Español e Inglés en octubre de 1991. El promedio de los resultados para todos los estudiantes en la prueba *LAS* fue de 3.9 en Español y de 1.5 en Inglés. (esta prueba usa una escala de 5 puntos). Estos resultados indican claramente que los estudiantes que tomaron parte en el estudio dominaban el Español y hablaban muy poco Inglés.

En octubre de 1991, se aplicó a todos los 180 estudiantes El Instrumento de Observación del Desarrollo de la Lecto-Escritura reconstruido para DLL y la prueba *Aprenda Reading Achievement Test* (Nivel preprimario – sub-pruebas 2, 3, 4, y lectura total). De los resultados de las seis escuelas en el estudio, se identificó a los estudiantes con resultados en el 20% más bajo. Cuatro de las seis escuelas tenían el programa DLL y dos no tenían el programa. En las cuatro escuelas con el programa DLL, se usaron los resultados del Instrumento de Obervacion del Desarrollo de la Lecto-Escritura en combinación con recomendaciones de los maestros(as) para saber cuáles estudiantes necesitaban más estar en el programa DLL. Las recomendaciones de los maestros fueron documentadas por medio de un proceso conocido como jerarquización alternante.

En la jerarquización alternante, el (la) maestro(a) toma una lista de los alumnos en su clase y los ordena según su percepción de las habilidades de lectura de cada estudiante. El (la) maestro(a) comienza identificando al estudiante más fuerte en lectura y lo pone en la lista primero, luego identifica al estudiante más débil y el nombre de ese estudiante es el que se clasifica como el más débil al final de la lista. Este procedimiento de jerarquización alternante (del más fuerte al más debil) continúa hasta que todos los estudiantes en el salón están ordernados en la lista.

Los estudiantes que participaron en DLL fueron aquéllos que recibieron de sus maestro(as) el menor rango y que obtuvieron los resultados más bajos en el Instrumento de Observación del Desarrollo de la Lecto-Escritura. Un total de 50 estudiantes fueron identificados para el programa DLL para el año escolar 1991-92. De este total, 23 estudiantes participaron en el programa.

Para controlar los efectos del tratamiento que pudieran resultar por tener maestros capacitados en DLL en salones básicos, se escogieron estudiantes para el grupo Control de dos escuelas que no tenían maestros capacitados en DLL ni tenían el programa DLL en su escuela. Los estudiantes del grupo Control fueron seleccionados también según los resultados del Instrumento de Observacion del Desarrollo de la Lecto-Escritura y la prueba *Aprenda Spanish Reading Achievement*. Con los resultados de estos instrumentos se pudo identificar a los estudiantes que estaban en el 20% más bajo de su grupo. De éstos, 23 estudiantes fueron identificados para el grupo Control. Estos estudiantes eran niños que podrían haberse beneficiado por medio de una intervención de DLL, pero no la recibieron.

Los estudiantes de las seis escuelas que no fueron miembros del grupo DLL o del grupo Control,se asignaron al grupo Comparación (n=134). Todos los 180 participantes en el estudio (DLL, Control, y Comparación), volvieron a tomar las pruebas Instrumento de Observación del Desarrollo de la Lecto-Escritura y *Aprenda Spanish Reading Achievement* (primer nivel, nivel primario – subtests 2,3 y lectura total).

Para la pregunta de investigación #1, todos los estudiantes recibieron el Instrumento de Observacion del Desarrollo de la Lecto-Escritura durante el mes de octubre de 1991 y en mayo de 1992. El promedio de los resultados de la observación antes e después fue comparado entre los tres grupos. Se compararon las calificaciones promedio pre y postest entre los tres grupos.

Para la pregunta de investigación #2, los resultados de la primera y segunda aplicación de la prueba *Aprendo Spanish Reading Achievement* fueron comparados entre los tres grupos. Los análisis utilizaron las calificaciones de la subprueba lectura total. Ya que diferentes formas de la prueba fueron utilizadas del otoño a la primavera (otoño, nivel preprimario; primavera, primer nivel; nivel primario) las calificaciones brutas fueron convertidas a calificaciones conpensadas para su análisis y comparación. Se utilizó entonces una prueba t para analizar la significancia de la diferencia entre grupos. La forma de la prueba de otoño de Aprenda tiene 3 sub-pruebas de lectura (sonidos y letras; lectura de palabras; y lectura de oraciones). La forma de primavera tiene sólo dos sub-pruebas (lectura de palabras y comprensión de lectura). Para el análisis, solamente las calificaciones de lectura total fueron utilizadas.

La pregunta de investigación #3 analizó el progreso en lectura de los grupos DLL, Control, y Comparación, en relación al progreso promedio del grupo total de estudiantes de primer año en Español del año escolar 1991-92. Su hicieron comparaciones analizando los logros de octubre a mayo en tareas del Instrumento de Observación del Desarrollo de la Lecto-Escritura y en la prueba Aprenda Spanish Achievement (lectura total de otoño a primavera). El progreso promedio se consideró en el rango de ± .5 desviaciones estandar del promedio del grupo total (DLL + Control + Comparación). Se hicieron comparaciones para cada una de las tareas observadas con el Instrumento de Observación de la Lecto-Escritura y para el total de la prueba *Aprenda Spanish Reading Achievement Test*.

La pregunta de investigación #4 fue analizada calculando el porcentaje de los estudiantes DLL que habían alcanzado o sobrepasado la banda promedio de fin de años de los logros en lectura de todos los estudiantes en primer año. La banda promedio fue calculada para todas las seis tareas observadas del Instrumento de Observación del Desarrollo de la Lecto-Escritura usando el mismo método que para la pregunta #3. Los estudiantes de DLL incluyeron a todos los estudiantes que completaron almenos 60 lecciones incluyendo a estudiantes que suspendieran exitosamente y tambien a los que no suspendieron el programa.

Resultados

Para la pregunta de investigación #1, tudos los participantes en el estudio recibieron el Instrumento de Observación del Desarrollo de la Lecto-Escritura durante el mes de octubre de 1991 y durante el mes de mayo de 1992. El promedio de los resultados de las observaciones de antes y después fueron comparadas con los tres grupos y se presentan para cada grupo en la Tabla 1.

Tabla 1

Promedios y la Desviaciones Esténdar de los Grupos de DLL, Control, y Comparación (Usando el Instrumento De Observación del Desarrollo de la Lecto-Escritura)

		*DLL n=23		Control n=23		Comparación n=134	
Tarea de Observación	Mes	Promedio	Dt	Promedio	Dt	Promedio	Dt
Identificación del Letras (max=61)	octubre	18.9	12.9	24.0	11.78	33.4	17.0
	mayo	54.7	8.8	47.6	13.3	49.1	13.5
Prueba de Palabras (max=20)	octubre	0.0	0.0	0.3	0.69	3.6	5.6
	mayo	15.9	6.1	10.3	7.56	11.7	8.0
Conceptos del Texto Impreso (max=24)	octubre	6.0	2.9	8.3	2.98	10.7	3.7
	mayo	16.0	3.4	12.7	3.5	14.3	4.1
Vocabulario Escrito (en 10 minuto)	octubre	3.0	1.8	4.6	3.49	9.7	10.8
	mayo	48.5	14.5	25.7	18.8	32.7	20.8
Dictado (max=39)	octubre	2.6	4.0	9.3	13.9	16.2	11.5
	mayo	33.8	6.5	25.6	14.2	29.1	10.4
Lectura de Textus (max=28)	octubre	1.6	.95	1.6	0.99	3.6	3.8
	mayo	13.9	8.6	6.2	5.2	11.4	9.6

*Incluye niños que suspendieron exitosamente el programa y niños que no suspendieeron el programa, que tuvieron por lo menos 60 lecciones de DLL.

Es importante notar que los tres grupos demonstraron avances del pretest al postest en todas las destrezas observadas. Sin embargo, para poder examinar la significancia de la diferencia en los avances entre los tres grupos, se aplicó una prueba t. Los resultados de las pruebas t se presentan en la Tabla 2.

Es importante notar que en el otoño de 1991, existían diferencias significativas entre el grupo DLL y el grupo Comparación en las seis destrezas observadas ($p < .001$) Además, estas diferencias eran significativas estadísticamente en todas las destrezas, con el grupo Comparación mostrando resultados más altos en todas las destrezas. Ya para mayo, el grupo DLL no solamente había alcanzado al grupo Comparación, sino que lo había superado. Los resultados de la prueba de mayo demuestran que los estudiantes de DLL ejecutan mejor las seis destrezas que los estudiantes del grupo Comparación. Estas diferencias también fueron significativas estadísticamente ($p < .05$) en todas las destrezas observadas excepto en lectura de texto.

Tabla 2
Valores de la Prueba t y Niveles de Significancia Estadística para los Grupos DLL, Control, y Comparación en el Instrumento de Observación del Desarrollo de la Lecto-Escritura

Tarea de Observación		DLL/ Control	DLL/ Comparación	Control/ Comparación
Identificación de Letras	otoño	1.40	4.73*	3.29***
	primavera	2.13**	2.69**	0.5
Prueba de Palabras	otoño	2.14**	7.5*	6.6*
	primavera	2.77**	2.89***	0.81
Conceptos del Texto Impreso	otoño	2.64**	6.81*	3.43***
	primavera	3.27***	2.09**	1.98
Vocabulario Escrito	otoño	0.68	6.63*	4.32*
	primavera	4.60*	4.49*	1.62
Dictado	otoño	5.78*	10.54*	5.31*
	primavera	2.52	2.90	1.13
Lectura de Textos	otoño	0.069	5.13*	5.13*
	primavera	3.67***	1.26	0.397

* arriba de .001
** arriba de .05
*** arriba de .01

Las diferencias entre el grupo DLL y el grupo Control no tuvieron significancia estadística en el Instrumento de Observación del Desarrollo de la Lecto-Escritura durante el otoño en tres destrezas, pero si tuvieron significancia estadística en las otras tres destrezas. Las destrezas con diferencias significativas incluyeron Prueba de Palabras ($p < .05$), Conceptos del Texto Impreso ($p < .05$), y Dictado ($p < .001$). Estas tres diferencias favorecieron al grupo Control, el cual había comenzado adelante del grupo DLL en todas las medidas. Los resultados de primavera sin embargo, indicaron que había diferencias significativas estadísticamente entre el grupo DLL y el grupo Control en las seis destrezas observadas. El grupo DLL se desempeñó mejor que el grupo Control en todas las destrezas ($p < .05$).

La comparación entre el grupo Control y el grupo Comparación muestra que en el otoño de 1991, existían diferencias significativas entre los dos grupos en cada una de las destrezas observadas ($p < .01$). Durante el otoño, el desempeño del grupo Comparación era superior estadísticamente al grupo Control. Sin embargo, durante la primavera de 1992, los resultados indicaron que, aunque el promedio de los resultados del grupo Comparación eran más alto que el grupo Control en las seis destrezas, la diferencia no tenía significancia estadística. Los dos grupos tuvieron ganancias. No obstante, el grupo Control no alcanzó al grupo Comparación, pero el grupo DLL sí.

La pregunta de investigacion #2 examinó las diferencias de los desempeños entre los grupos DLL, Control, y Comparación en una prueba estandarizada de lectura. Para esta comparación se utilizó la prueba *Aprenda Spanish Achievement Test*. Los tres grupos tomaron esta prueba en octubre de 1991 y en mayo de 1992. Los comparaciones se hicieron con los resultados de lectura total.

Para esta comparación las calificaciones brutas de los estudiantes fueron convertidas a calificaciones estandarizadas y a percentiles. Las calificaciones estandarizadas y los percentiles de los grupos DLL, Control, y Comparación se presentan en la Tabla 3. Es importante notar que las calificaciones estandanzadas de los tres grupos fueron más altas en mayo que en octubre. Sin embargo, cuando las calificaciones brutas fueron conectadas a percentiles, sólo el grupo DLL y el grupo Control demonstraron ganancias. El grupo DLL mejoró del 28vo percentil al 41vo percentil, mientras que el grupo Control mejoró del 26vo al 28vo percentil. El grupo Comparación bajó del 35avo percentil al 31avo percentil. Si el 50vo percentil se considera como un indicador del promedio nacional, es signficativo que sólo el grupo DLL se aproximó a este promedio nacional.

Tabla 3
Comparación de los Resultados de la Prueba Aprenda Spanish Reading Achievement de los Estudiantes del Groupo DLL, Control, y Comparación

Grupo	Otoño 1991		Primavera 1992		
	Promedio del los Puntajes Estandar	Percentil	Promedio del los Puntajes Estandar	Percentil	Ganancias (En Puntos Percentiles)
DLL Grupo	455	28vo	521	41vo	+13
Control Grupo	453	26vo	503	28vo	+ 2
Grupo Comparación	460	35vo	508	31vo	- 4

La pregunta de investigacion #3 examinó como los estudiantes de los grupos DLL, Control, y Comparación se comparan al progreso normal promedio de todos los estudiantes de primer año. Esta comparación se hizo usando las seis destrezas del Instrumento de Observación del Desarrollo de la Lecto-Escritura y los resultados totales de lectura en la prueba *Aprenda Spanish Reading Achievement*.

Para cada una de estas medidas, se calculó el promedio y desviación estándar. La banda promedio se consideró como ± .5 desviaciones típicas del promedio. De las seis destrezas observadas en el Instrumento de Observación del Desarrollo de la Lecto-Escritura, los puntajes crudos fueron utilizados para calcular el promedio. Para la prueba *Aprenda Spanish Reading Achievement* se usaron los puntajes estándar. Este procedimiento para determinar si el progreso del estudiante equivalía al promedio de otros estudiantes fue el mismo utilizado por la Universidad Estatal de Ohio cuando se estudió el impacto de RR en la lectura en estudiantes de habla Inglesa.

Las Tablas 4 - 9 muestran los logros hechos por cada grupo para uno de los criterios medidos. Las ganancias de cada grupo se comparan con la banda de lo que se considera un progreso promedio. Es interesante notar que para la fecha de las pruebas de primavera, los estudiantes del grupo DLL habían alcanzado la banda promedio en todos los criterios medidos. En una destreza (vocabulario escrito), el promedio en la primavera para los estudiantes de DLL había sobrepasado la banda promedio. Esto se interpreta como una indicación de que los estudiantes de DLL han progresado al nivel promedio según este criterio, y así se demuestra que la teoría de que los estudiantes pueden acelerar su progreso en programas DLL en Español así como otros estudiantes aceleran su progreso en Inglés. Como con las preguntas #1 y #2 ya discutidas anteriormente, los estudiantes de DLL sobrepasaron en todos los criterios a los estudiantes del grupo Control y del grupo Comparación en los resultados del mes de mayo.

Los estudiantes de los grupos Control y Comparación también demonstraron ganancias del otoño a la primavera. Los estudiantes del grupo Control alcanzaron la banda promedio de progeso en cinco de las seis destrezas observadas, y los estudiantes del grupo Comparación alcanzaron la banda promedio en todas las destrezas. Sin embargo, las ganancias de estos dos grupos estuvieron retrasadas en niveles de significancia estadística en comparación a las ganancias del grupo DLL.

Tabla 4

Comparación de los Puntajes de los Estudiantes de DLL, Control, y Comparación con los Estudiantes de Primer Grado en la Tarea de Identificación de Letras

	Promedio/ DLL	Promedio/ Control	Promedio/ Comparación
Otoño	18.9	24	33.4
Primavera	54.7	47.6	49.1

Banda Promedio = ± .5 de la Desviación Estándar del *Promedio*
Promedio = 49.8 (Bando Promedio = 43.2 – 56.4)
Identificación de Letras (maximo de 61)

La pregunta de investigación #4 examinó la proporción de estudiantes del grupo DLL que al final del año obtuvieron resultados en el instrumento de lectura en Español a un nivel equivalente a la banda promedio. En otras palabras, además de considerar el promedio de los estudiantes del grupo DLL, cuántos de ellos aceleraron su progreso y alcanzaron al promedio en todas las medidas. Para contestar esta pregunta se utilizó otravez el Instrumento de Observación del Desarrollo de la Lecto-Escritura. Para cada uno de los 23 participantes en el grupo DLL, los resultados de la prueba en mayo de 1992 fueron comparados a los bandas premedio utilizadas para la pregunta #3. Se determinó entonces el número de estudiantes que alcanzaron resultados promedio en cada destreza observada. Después de que todos los resultados fueron calculados, se calculó el porcentaje de los estudiantes de DLL que habían alcanzado el rango promedio. Los puntajes y porcentaje se presentan en la Tabla 10. Veintiuno de los 23 participantes (91%) obtuvieron resultados al final del año que alcanzaron o sobrepasaron el promedio en todas las tareas observadas. Este resultado ha sido interpretado como otra señal de que el programa DLL está acelerando el progreso de los estudiantes y está teniendo un impacto positivo en los participantes.

Tabla 5

Comparación de los Resultados de los Estudiantes de DLL, Control, y Comparación con los Estudiantes de Primer Grado en la Tarea de Prueba de Palabras

	Promedio/ DLL	*Promedio/* Control	*Promedio/* Comparación
Otoño	0.0	.3	3.6
Primavera	15.9	10.3	11.7

Banda promedia = ± .5 de la Desviación típica del *Promedio*
Promedio = 12.2 (Banda Promedia = 8.2 – 16.2)
Prueba de Palabras (maximo de 20)

Tabla 6

Comparación de los Resultados de los Estudiantes de DLL, Control, y Comparación con los Estudiantes de Primer Grado en la Tarea de Conceptos del Texto Impreso

	Promedio/ DLL	*Promedio/* Control	*Promedio/* Comparación
Otoño	6.0	8.3	10.7
Primavera	16.0	12.7	14.3

Banda Promedia = ± .5 de la Desviación típica del *Promedio*
Promedio = 14.5 (Banda Promedia = 10.4 – 16.6)
Concepto del Texto Impreso (maximo de 24)

Tabla 7

Comparación de los Resultados de Los Estudiantes de DLL y Control con los Estudiantes de Primer Grado en la Tarea de Vocabulario Escrito

	Promedio/ DLL	*Promedio/* Control	*Promedio/* Comparación
Otoño	3.0	4.6	9.7
Primavera	48.5	25.7	32.7

Banda Promedia = ± .5 de la Desviación típica del *Promedio*
Promedio = 34.7 (Banda Promedia = 24.3 – 45.1)
Vocabulario Escrito (en 10 limite de minutos)

Tabla 8

Comparación de los Resultados de los Estudiantes de DLL, Control, y Comparación con los Estudiantes de Primer Grado en la Tarea de Pictado

	Promedio/ DLL	*Promedio/* Control	*Promedio/* Comparación
Otoño	2.6	9.3	16.2
Primavera	33.6	25.6	29.1

Banda Promedia = ± .5 de la Desviación típica del *Promedio*
Promedio = 29.1 (Banda Promedia = 24.6 – 34.8)
Dictado (maximo de 39)

Tabla 9

Comparación de los Resultados de los Estudiantes de DLL, Control, y Comparación con los Estudiantes de Primer Grado en la Tarea de Lectura de Textos – octubre 1991/mayo 1992

	Promedio/ DLL	*Promedio/* Control	*Promedio/* Comparación
Otoño	1.6	1.6	3.6
Primavera	13.9	6.2	11.4

Banda Promedia = ± .5 de la Desviación típica del *Promedio*
Promedio = 11.7 (Banda Promedia = 6.9 – 16.5)
Lectura de Textos (maximo de 28)

Discusión

Los datas aquí presentados establecen que el programa DLL logró acelerar el progreso de estudiantes de habla Hispana que tenían dificultades al aprender a leer en Español. Por esta razón, el impacto de este programa en los participantes se puede interpretar como positivo, ya que los estudiantes del programa DLL mostraron ganancias significativas en la adquisición de la lecto-escritura durante el curso del programa. Mas aún, estas ganancias son significativas estadísticamente cuando se comparan con los estudiantes del grupo Control que también demonstraron dificultades en la lectura en Español, pero que no participaron en el programa DLL. Las diferencias del otoño a la primavera entre el grupo DLL y el grupo Control fueron significativas en todos los criterios medidos. Algo más importante fue el hecho de que las ganancias demonstradas por los participantes de DLL sobrepasaron a los participantes del grupo Comparación de estudiantes de primer año que aprendían a leer en Español. El grupo de Comparación consistío de estudiantes que habían obtenido resultados por arriba del 20% de su clase (todos estaban arriba de este nivel). Las diferencias del otoño a la primavera entre los grupos DLL y Comparación también demonstraron resultados significativos en todos los criterios medidos. Estos resultados apoyan la teoría que Descubriendo La Lectura en Español, así como RR en Inglés, ayuda a los estudiantes que están teniendo dificultades al leer en Español, en un periódo de tiempo corto (de 12 a 16 semanas).

Tabla 10

Número y Porcentaje de Estudiantes de DLL que Llegan a la Banda Promedia al Final del año Escolar – mayo 1992

Tarea	Banda Promedia	Igual a, o Arriba		Igual a, o Abajo	
		Numero	%	Numero	%
Identificación de Letras (maximo de 61)	43.2 – 56.4	21	91%	2	9%
Prueba de Palabras (maximo de 20)	8.2 – 16.2	21	91%	2	9%
Conceptos del Texto Impreso (maximo de 24)	10.4 – 16.6	22	96%	1	4%
Vocabulario Escrito (en 10 minutos)	24.3 – 45.1	21	91%	2	9%
Dictado (maximo de 39)	24.6 – 34.8	22	96%	1	4%
Lectura de Texto (maximo de 28)	6.9 – 16.5	17	74%	6	26%

Note. El grupo incluye estudiantes que completaron exitosamenteel programa DLL y se les dio do alta programa, y los estudiantes que no egresaron pero completaron por lo menos 60 lecciones.

Además, el programa acelera el progreso de los participantes al punto de alcanzar a otros estudiantes que leen según el promedio de la clase. De hecho, en todos los criterios usados en este estudio, los estudiantes de DLL no solamente alcanzaron a sus compañeros que estaban en un nivel promedio, sino que los sobrepasaron en niveles estadísticamento significativos. Mientras que estos resultados son muy estimulantes para los estudiantes de DLL, producen algunas preocupaciones en cuanto a la calidad de la instrucción de la lectura en Español en los salones regulares de enseñanza bilingüe. En su conjunto, el programa instruccional para la lecto-escritiva en Español amerita mayor estudio y consideración.

Mientras que esta investigación es positiva en relación a lo que se puede hacer en un programa DLL en Español, debemos volver a mencionar que esta investigación incluyó solamente a 23 participantes. Se necesita mes información recopilada en otros lugares y con otros grupos de participantes para poder obtener evidencia adicional en relación a la eficacia inicial del programa en Español. Estos datos, sin embargo, proporcionca evidencia de que el programa ha sido muy efectivo para los participantes.

De igual importancia es la manera en que los participantes del programa podrán mantener los beneficios iniciales del programa mientras avanzan de un nivel escolar a otro, y mientras hacen la transición de leer en Español, a aprender a leer en Inglés. Los 23 participantes serán considerados como la fuente de datos para un estudio longitudinal que analizará el mantenimiento de los efectos de DLL en otros niveles escolares y la transferencia de estrategias de DLL del Español al Inglés. Sin embargo, podemos concluir que los primeros resultados de esta investigación con este grupo de estudiantes demonstraron que el programa promete mucho para poder ayudar a estudiantes que están teniendo dificultades al aprender a leer.

Referencias

Allington, R., & Broikou, R. (1988, April). Development of shared knowledge: A new role for classroom and specialist teachers. *The Reading Teacher, 41*, 806-821.

Barrera, R. (1989, January). *Issues related to pullout and remedial programs and student achievement: A review of the research.* Symposium presented at the University of Arizona (R. Barrera, chair), Tucson.

Clay. M. (1979a, 1985). *The early detection of reading difficulties* (3rd ed.). Auckland, NZ: Heinemann.

Clay, M. (1979b). *Reading: The patterning of complex behavior.* Auckland, NZ: Heinemann.

Clay, M. (1982). Reading Recovery: A follow-up study. In M. Clay (Ed.), *Observing young readers: Selected papers.* Exeter, NH: Heinemann.

Clay, M. (1989). Concepts about print in English and other languages. *The Reading Teacher, 42*, 268-276.

Cummins, J. (1989). *Empowering minority students.* Sacramento: California Association for Bilingual Education.

DeFord, D., Pinnell, G., Lyons, C., & Young, P. (1987). *Report of the follow-up studies: Vol. 7 Columbus, Ohio, Ohio Reading Recovery Project 1985-86 and 1986-87.* Columbus: The Ohio State University.

District Policy 1110: Bilingual/bicultural education. (1981, March). Tucson: Tucson Unified School District.

Dyer, P. (1992). *Reading Recovery: A cost-effectiveness and educational outcomes analysis.* Arlington, VA: Educational Research Service.

Escamilla, K. (1987). *The relationship of native language reading achievement and oral English proficiency to future achievement in reading English as a second language.* Unpublished doctoral dissertation, University of California, Los Angeles.

Escamilla, K., & Andrade, A. (1992). Descubriendo La Lectura: An application of Reading Recovery in Spanish. *Education and Urban Society, 24*, 212-226.

Escamilla, K., Basurto, A., Andrade, A., & Ruíz, O. (1992, January). *Descubriendo La Lectura: A study of methods of assessing and identifying the reading needs of Spanish-speaking first grade students.* Paper presented at the National Association for Bilingual Education Conference (NABE), Albuquerque.

Fradd, S., & Tikunoff, W. (1987). *Bilingual education and bilingual special education: A guide for administrators.* Boston: College Hill.

Hornberger, N. H. (1992). Bi-literacy contexts, continua, and contrasts: Policy and curriculum for Cambodian and Puerto Rican students in Philadelphia. *Education and Urban Society, 24*, 196-211.

Huck, C., & Pinnell, G. (1985). *The Reading Recovery project in Columbus, Ohio: Pilot year 1984-85* (Technical Report). Columbus: The Ohio State University.

Krashen, S., & Biber, D. (1988). *On course: Bilingual education's success in California.* Sacramento: California Association for Bilingual Education.

Lyons, J. (1991, May). The view from Washington. *NABE News, 14*(5), 1.

Pinnell, G. (1988). Holistic ways to help children at risk of failure. *Teachers Networking – The Whole Language Newsletter, 9*(1), 3.

Pinnell, G. (1990). Success for low achievers through Reading Recovery. *Educational Leadership, 48*(1), 17-21.

Pinnell, G., DeFord, D., & Lyons, C. (1988). *Reading Recovery: Early intervention for at-risk first graders.* Arlington, VA: Educational Research Service.

Pinnell, G., Fried, M., & Estice, R. (1990, January). Reading Recovery: Learning how to make a difference. *The Reading Teacher, 43*(4), 282-295.

Ramirez, D., Yuen, S., & Ramey, D. (1991). *Executive summary, final report: Longitudinal study of structured English immersion strategy, early-exit and late-exit transitional bilingual programs for language minority children* (Contract No. 300-87-0156). San Mateo, CA: Aguirre International.

SUSTAINED EFFECTS OF READING RECOVERY INTERVENTION ON THE COGNITIVE BEHAVIORS OF SECOND GRADE CHILDREN AND THE PERCEPTIONS OF THEIR TEACHERS

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READING RECOVERY (Clay, 1982, 1991, 1993b) IS AN EARLY INTERVENTION PROGRAM beginning with first grade children. The children identified as the lowest in the first grade cohort work one-on-one with a specially trained teacher for an intensive 30 minutes daily for approximately 12 to 20 weeks. As the child reads and writes whole text, the teacher responds in ways that support the development of a self-extending system. The ultimate goal is to enable these children to use reading and writing strategies effectively and independently so that they can function successfully in an average reading setting within the regular classroom. Sustained effects of the program should provide some evidence that the child has gained inner control of the strategic processes needed for an independent system that extends itself every time the child reads (Clay, 1991).

Evidence indicates that Reading Recovery has positive outcomes for first grade children already failing to progress at the same rate as their average classmates (Clay, 1982, 1990, 1993b; DeFord, Lyons, & Pinnell, 1991; Lyons, Pinnell, & DeFord, 1993; Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994). Each Reading Recovery site in the United States maintains local data collection procedures and prepares an annual report of program results. These data also feed into a national data bank at The Ohio State University to be aggregated across a growing, diverse population. There is also evidence of sustained gains in the extensive follow-up studies in New Zealand (Clay, 1993b) as well as the Columbus Project in Ohio (DeFord, Pinnell, Lyons, & Place, 1990; Lyons, Pinnell, & DeFord, 1993). Many individual sites have designed their own follow-up studies to explore the longitudinal benefits of this early intervention.

The general purpose of this study was to examine the sustained effects of the Reading Recovery intervention on second grade children who successfully completed the program by meeting established criteria (called discontinuing). First, they were observed while performing on literacy tasks a year or more following the intervention. Beyond the scores on these literacy tasks, evidence of the comprehending behaviors of the children as they read contributed to an understanding of their cognitive processes. Finally, the perceptions of classroom teachers about the literacy behaviors and school performance offered insights about program effects across time.

The following questions guided the study:

1. How do scores on three literacy tasks (text reading, dictation, and spelling) of second grade children who were successfully discontinued from Reading Recovery compare with scores of their second grade peers one year or more after the termination of the intervention?
2. In what ways are oral reading behaviors on text similar and different for the two groups?
3. Are there differences between the two groups (former Reading Recovery children and second grade peers) on measures of story retellings?
4. Are there differences between the two groups on measures of fluent reading during oral reading of text?
5. Are there differences in the ways these groups are perceived by second grade classroom teachers?

A consistently high percentage of the children who have an opportunity for a full program are successfully discontinued from the program into an average classroom setting annually, with the average percent discontinued ranging from 83 percent to 87 percent nationally (Lyons, Pinnell, & DeFord, 1993). Only discontinued children who met Reading Recovery criteria for successfully returning to an average classroom setting during the first grade year were included in this sample.

If a goal of Reading Recovery is to bring children up to average classroom achievement, an important question must be considered. What does it mean to bring them up to average and how does this affect the classroom teacher's perception of the range of reading behaviors among her students? Are the literacy behaviors of former Reading Recovery children expected to match those of children who required no intervention? These children began their first grade year with the lowest literacy profiles in their classrooms. Therefore, the notion of accelerated progress resulting in successful performance within an average classroom setting calls for an exploration of this phenomenon relative to children's performance and teachers' perceptions.

Exploring Comprehending Behaviors

Reading Recovery teachers are frequently questioned about the role of comprehension in the program. Rather than addressing comprehension as a separate process, Reading Recovery developer Marie Clay (1991) assumed that comprehension is an inherent focus in a meaning-based program. A person taking running records of text reading is observing for behavioral evidence of the reader's understanding. Evidence of the comprehending process in Reading Recovery has been examined in both theoretical and research settings (Askew, 1991, 1993).

Goodman (1985) argued that a distinction exists between comprehension as a product and comprehending as a process. He suggested that comprehending is a constructive process in which readers make sense of the text. It goes on during reading and long afterward as readers reconsider and reconstruct what was comprehended:

> The relationships between comprehending and comprehension are not simple and isomorphic. What one knows after reading is the product of what one knew beforehand plus how well one read the text. So, effective comprehending is essential to effective comprehension, but not sufficient. Correlations between measures of the two . . . are moderate and significant, but not high. (p. 831-832)

Tierney (1990) suggested that four major developments since the 1970s have contributed to an expanded conception of comprehension. First is that reading involves constructive processes, with a view of meaning-making tied to key postulates: (a) the desire of readers to make sense drives comprehension processes, (b) understandings are essentially inferential, (c) background knowledge connects with expectations to develop meanings, and (d) interpretation and comprehension are both idiosyncratic and stylized. Tierney cited other developments contributing to a new view of comprehending: reading as writing, reading as engagement, and reading as situation-based. Clay (1991) also suggested that reading and writing acquisition involves the active construction of a network of strategies, with comprehending having a central role.

In the study reported here, comprehending was examined as evidence of a process of constructing meaning from text. Views of assessing meaning-making with young subjects vary in the literature. Three indicators assumed to show evidence of the comprehending process are explored here: processing behaviors during the reading of continuous text, retelling behaviors, and fluency behaviors.

Analysis of Oral Reading

Analysis of oral reading errors has been explored relative to the notion of reading comprehension. Although Leu (1985) cautioned against using oral reading to estimate the kind of linguistic processing going on inside the head of a reader, there is evidence that with young children the analysis of oral reading can be quite informative (Johnston, 1992).

Goodman (1985) contended that evaluation of reading has generally focused on comprehension as a product measured by a post reading test of knowledge. Typical formats include explicit text-based questions, general questions, open-ended retellings following reading, and a combination of these. Since these follow the reading, they are limited by what the reader is willing and able to report as well as what has been comprehended. Comprehension may be changed in the course of testing on the basis of questions which invite particular responses and views.

Miscue analysis is a means of examining comprehending as it takes place during reading (Goodman, 1985). Goodman contended that readers utilize three information systems in comprehending: the graphophonic system, the syntactic system, and the semantic system. Oral reading miscues are examined. "The extent to which miscues result in meaningful text or are self-corrected if they disrupt meaning gives strong indications of the reader's concern for and ability to make sense of the text" (p. 831).

As a tool for observing young readers' oral reading behaviors, Clay (1993a) developed the running record of text reading described in her book, *An Observation Survey of Early Literacy Achievement*. When a child is reading out loud, the recorder simply takes a blank sheet of paper and records the child's reading behaviors in a controlled and systematic way. Advantages of the running record include its flexibility for use at any time and on any book as well as its lack of relationship to a testing setting (Johnston, 1992). Analysis of oral reading errors provides insight into whether children are predicting using sources of information flexibly and strategically.

When examining oral reading errors, the recorder can find consistencies in information about how the child gathers up the cues—from the structure of the sentence, the meaning of the message, the visual cues of the letters, or letter order. The recorder can infer from the kinds of errors and self-corrections that children make, along with their comments during the reading, much of what they are attending to and understanding (Clay, 1993a).

Retellings

Behaviors called upon in retelling events offer evidence about the child as a meaning-maker. Irwin and Mitchell (1983) argued that retellings indicate not only what readers recall from the text, but what they view as important as well as how they organize what they recall. Retellings may provide insights into the product and the process, yielding information about what is comprehended as well as the processes used in comprehending. Mitchell (1988a) suggested that retellings reveal other things about a child's comprehension: sensitivity to text genre, awareness of author's organizing strategies, language fluency, ability to organize retellings in a coherent fashion, ability to identify the important aspects of the material read, and evidence of miscomprehension.

Johnston (1992) outlined limitations frequently cited for using retellings as an assessment of comprehending behaviors. First, he challenged the typical audience for the retelling. It is an unusual social situation in which a child has to retell a shared story to the person who just heard or read it. He suggested that there are ways to make retellings more socially appropriate: retelling to a teacher who has not read the story and who may question the reader, storytelling, dramatization using props or representations, and a variety of additional options and combinations of options. Johnson further argued that some children may be shy in a performance situation. Although he reported studies that indicated that more able readers tend to give more retelling responses than less able readers, Johnson suggested that the able readers are more likely to recognize and fit into a testing situation while the less able readers tend to give a shorter but more socially appropriate response.

Garcia and Pearson (1991) called for contextualized retellings that include all children, inviting them to respond in comfortable and familiar ways. They also suggested that bilingual children may need to present their retellings in their first language.

Fluency

Although the term fluency is widely used in the literature, it is difficult to find precise definitions of it. Common usage ranges from an emphasis on the mechanical aspects of rapid reading to an emphasis on the connections between fluency and the expressions of thought (Hoffman & Isaacs, 1991).

Slayter and Allington (1991) argued that discussions of dysfluency too often focus on slow or deficient decoding or word recognition abilities. They contended that even in initial stages of acquisition, oral reading fluency is more directly linked to text comprehension processes than to word recognition.

"Nothing destroys the meaning more rapidly than droning through the phrases and punctuation marks, pausing at points which break up the syntactic groups and the sense" (Clay, 1991). Clay and Imlach (1971) studied pause and stress behaviors of children at a grade placement comparable to second grade in the United States. They found that good readers were operating at the sentence and phrase level, moving to the word level when necessary. They appeared to gain speed and understanding from anticipating whole stretches of text and checking their predictions visually. Low progress readers, however, seemed unable to use cues beyond the syllable and word level and were overcommitted to the notion that reading was recognizing or sounding out words.

Based on Clay's work, DeFord (1991) suggested that flexibility in using all information sources when reading is the goal of fluency instruction, not just increased pacing of text reading. If fluent reading is influenced by a reader's facility and flexibility in monitoring and searching actively for sources of information, in checking one source of information against another, and in solving problems, then it seems that the study of fluent reading behaviors should provide some evidence of comprehending behaviors while reading text (Clay, 1993b):

> Fluent reading in young, beginning readers has been associated with the process of comprehending or meaning-making. When the reading is phrased like spoken language and the responding is fluent (and some people say fast), then there is a fair chance that the reader can read for meaning, check what he reads against his language knowledge, and his attention can go mainly to the messages. (p. 51)

Clay (1993b), however, cautioned that two essential kinds of learning must be balanced: successful reading of familiar material which strengthens the decision-making processes, and independent problem-solving on new and interesting text with supportive teaching.

The relationship between fluent oral reading and comprehending is a tenuous one. Dowhower (1991) compared the relationship to the chicken-and-the-egg dilemma. She argued that it is not possible to know which comes first or if one is necessarily an indicator of the other. It does, however, appear that comprehension and fluent reading are linked, but it is unclear how they are related.

Pilot Study

A comprehensive pilot study was conducted to explore ways of comparing former Reading Recovery children who had successfully discontinued from the program in grade one with their second grade peers on a variety of measures: literacy tasks, retelling tasks, fluent reading measures, and perceptions of second grade teachers. At the end of their second grade year, 50 discontinued Reading Recovery children were randomly selected from the total list of discontinued children in three sites. A random group of 50 children was also selected from all regular first grade classrooms in Reading Recovery schools in the same three sites. Children in both groups were selected from the total eligible population using a table of random numbers. Any children formerly served in Reading Recovery were ineligible for membership in the random group, making comparisons more rigorous for the Reading Recovery group. In both groups the numbers of males and females were similar and ethnic representation included Anglo, African American, Hispanic, and Asian.

Tasks and Procedures

Literacy performance was assessed using measures of oral reading of text, dictation, and spelling. The Reading Recovery test packet, used nationally for program data collection, was used as the test of text reading. The packet comprises a series of selections that have been leveled according to gradients of difficulty. Books and selections have been tested for levels of difficulty across large numbers of children through the Reading Recovery project at The Ohio State University. (See Table 1 for an explanation of text reading levels.) Running records (Clay, 1993a) were used to determine book level scores and to document oral reading behaviors.

The dictation task, developed by DeFord (DeFord, Pinnell, Lyons, & Place, 1990), consisted of a two sentence passage that was read to the child first as whole text and then reread as needed for the child to write each word. The child was reminded to say each word slowly and

Table 1
Correspondence Between Text Reading Levels and Traditional Grade-Level Designations

Text Reading Level	Grade Level Designation[a]
1-4	R
5-8	Preprimer
9-12	Primer
14-16	First Reader
18-20	Second Reader
22-24	Third Reader
26	Fourth Reader
28	Fifth Reader
30	Sixth Reader
32	Seventh Reader
34	Eighth Reader

[a] Materials representative of commercially graded reading series.

to write anything he or she heard. Dictation scores represented the number of sounds heard and recorded from a possible 64 sounds. The same task was used to obtain a spelling score. A point was assigned for each word written correctly, with a possible score of 18.

Two tasks were used to document evidence of comprehending behaviors. The first was an oral retelling following each text reading for which the oral reading accuracy was 90 percent or higher. Working on the assumption that retellings can yield information about the comprehending process, investigators explored a variety of retelling scoring options. An important criterion was the use of a system that viewed comprehending as both text-based and reader-based. Therefore, the holistic system proposed by Mitchell (1988b) was used with some modification. The following categories provided the basis for scoring retellings in this study: (a) text-based comprehension (including attention to explicit information, inferred information, important information, and relevance of content and concepts); (b) reader's response and reactions to text (including use of prior knowledge, application of generalizations, use of creative reactions to text, and affective involvement with text); and (c) reader's language use (including language fluency and organization abilities). Two of Mitchell's indicators from the third category: evidence of the reader's sense of audience or purpose and evidence of the reader's control of the mechanics of speaking or writing, were excluded because of the nature of this study.

The second measure of comprehending behaviors was fluent oral reading. The system chosen for the scoring of fluency measures on text reading was a multidimensional fluency scale (Zutell & Rasinski, 1991) rather than some of the more traditional, single dimension scales often used. Zutell and Rasinski's multidimensional scale consists of three dimensions: pace, smoothness, and phrasing. Within each dimension, four levels are described serving as a scoring rubric. Although the three aspects of pace, smoothness, and phrasing influence each other, they are somewhat distinct. This multidimensional scale was selected to add descriptive data about the strengths and weaknesses of the readers.

In order to tap the perceptions of classroom teachers, a questionnaire was developed. In addition to information about grades, reading group placement, placement in any other programs, and basal/text placement, the instrument included questions about teacher perceptions of each child's performance on a number of factors and predictions for each child's future reading and writing performance.

All testing was completed in May by Reading Recovery teacher leaders approaching the end of their training year. All text readings, along with retellings, were audiotaped. Retellings were transcribed verbatim. Questionnaires were collected from the classroom teachers of the Reading Recovery children. Although general questions were asked of teachers of the random sample group, these teachers did not complete questionnaires on random group children, a clear limitation of the pilot study.

Pilot Results

Literacy scores were examined to determine if mean scores of Reading Recovery children fell within an average band, measured as a standard deviation above and below the mean, of the mean scores of the random group. Mean scores on the three literacy tasks (text reading, dictation, and spelling) are shown in Table 2. Reading Recovery children scored within average range for their peer group in second grade. The mean text reading level for the Reading Recovery group indicated that, on an average, children successfully (at 90 percent accuracy or above) read a passage taken from a fourth grade reader. Mean scores for the random sample group reflected successful oral reading performance on a passage from a fifth grade reader.

No significant differences ($p < .05$) were found between the Reading Recovery and the random group on any of the three retelling indices or when all three indices were considered together (See Table 2 for means and standard deviations on retelling measures.). Although responses were generally short and not elaborated, children in both groups revealed the main idea or general theme of the selection. Their facts and inferences were generally relevant. Most retellings, again across both groups, were organized sequentially or in a way to be easily understood. Very few children volunteered more information as the result of a teacher prompt to continue. It is possible that the decision to score the retellings on the highest level passage read at 90 percent or better influenced the scores. Children were frequently retelling passages taken from materials considerably above their grade level assignment. Conceptual load may have been a factor in retelling measures. For example, one of the higher passages was about a maestro/virtuoso.

There were no significant differences ($p < .05$) between the two groups on any of the three measures of reading fluency or when the three measures of fluency were considered together. Fluency scores were not generally very high for either group (see Table 2). Very few children were fluent on all three dimensions perhaps because these were first readings of novel texts. It should also be noted that fluency measures were based on the highest text level read at 90 percent accuracy or higher. Frequently these text levels were considerably higher than a typical second grade passage. Therefore, conceptual load and/or text characteristics may have affected the children's attempts at fluency and may have influenced findings in this pilot study.

Because complete questionnaire data were collected only on Reading Recovery children, results reflecting teacher perceptions were of limited value. It seems important, however, to report status of discontinued children relative to referrals for additional support services. Of the 50 children in this study, 42 received no additional remedial support. Chapter 1 continued to serve four children, while four were served for learning disabilities.

Teacher-reported data also indicated that a dramatic number of high text readers may be under-placed in basal/text materials in both the random and the Reading Recovery groups. Most children were placed in texts identified as on-level, regardless of group assignment. Therefore, membership in a high group did not correlate strongly with basal/text level placement.

On a five-point scale of reading behaviors and attitudes, teachers perceived that most of the discontinued Reading Recovery children were average in reading ability. Teachers also perceived that the children generally had positive attitudes about reading, chose books when time allowed, worked diligently on school tasks, and responded well to discussion. When predicting reading progress for these children in third grade, teachers indicated that 24 of the children should continue to make good to excellent progress. They predicted that 16 would make steady progress while five would make cautious progress.

Table 2
Pilot Study Means, Standard Deviations, and Average Band for Scores on Literacy Tasks, Retellings, and Fluency Measures

Task Score	Maximum	Reading Recovery (*n* = 50)	Random Sample (*n* = 50)	Average Band (1 SD)
Dictation Task	64	60.32 (3.50)	61.20 (4.19)	57.01-64.39
Spelling Task	18	12.26 (2.86)	13.90 (3.17)	10.73-17.07
Text Reading Task	34	25.78 (5.75)	28.42 (6.85)	21.57-35.27
Fluency: Pacing	4	2.09 (.97)	2.43 (.93)	1.50-3.36
Fluency: Smoothness	4	1.93 (.89)	2.30 (.79)	1.51-3.09
Fluency: Phrasing	4	2.07 (.89)	2.30 (1.03)	1.27-3.33
Retelling: Text-Based	16	8.84 (2.25)	9.12 (2.94)	6.18-12.06
Retelling: Prior Knowledge	16	4.07 (.34)	4.15 (.42)	3.73-4.57
Retelling: Language	8	4.23 (1.07)	4.39 (1.32)	3.07-5.71

Limitations of Pilot Study

Findings in the pilot study were influenced by the following limitations: (a) the population lacked diversity, including suburban districts with records of achievement levels well above the national average; (b) text levels used for fluency and retelling data may have included conceptual and vocabulary loads that were inappropriate for the children, affecting comprehending behaviors; (c) questionnaires were completed only for Reading Recovery children, with limited data about random children coming from informal dialogue with teachers; and (d) running records were not analyzed for evidence of reading behaviors during the processing of continuous text.

A replication of the study considering the limitations as well as refinement of procedures was considered important. Establishment of scoring criteria for retellings and fluency was an important result of the pilot study. The main study was intended to include a more diverse population and to include additional analyses.

The Main Study

Method

Subjects

At the end of their second grade year, 54 children who had been successfully discontinued from the Reading Recovery program during their first grade year were randomly selected in nine school districts. Another group of 53 children (random group) was randomly selected from all second graders (excluding all former Reading Recovery students) in the same schools. The nine school districts were characterized by a wide range of socioeconomic levels and ethnic groups. Six districts were large suburban districts, while three were classified as urban.

In the Reading Recovery group, 30 children were male and 24 were female. Ethnic representation included 26 Anglos, nine African Americans, 15 Hispanics, three Asians, and one other. In the random group, 27 males and 26 females were involved in the study. Thirty-two were Anglo, nine African American, seven Hispanic, four Asian, and one other.

Tasks and Instrumentation

The three literacy tasks (text reading, dictation, and spelling) were identical to the pilot study. Mitchell's (1988b) holistic rubric was used to analyze retellings and Zutell and Razinski's (1991) multidimensional fluency scale was used to analyze fluency behaviors. Running record data were added to describe oral reading behaviors for both groups.

The classroom teacher questionnaire was modified slightly following the pilot study (see Figure 1). An effort was made to obtain the following data for all children in May of their second grade year: ethnicity, gender, types of services that children may be receiving, reading group membership, reading grade on most recent report card, and level of placement in basal or other text. Teachers were also asked to make predictions for the child's progress in reading and in writing in third grade. In addition, teachers completed a five-point Likert scale to describe behaviors (both literacy and school behaviors) of each child. Additional teacher comments were invited. The teacher questionnaire was completed in May, the last month of the school year.

Procedures

Near the end of the school year, both groups of second graders were given a text reading task (oral reading) using a series of leveled selections, while the tester completed a running record (Clay, 1993a) of text reading. All children were also given a two sentence dictation task that was scored for sounds recorded and for accurate spelling. Although these were not a major focus of the present study, results will also be reported.

If level 20 (on-level text) on the text reading task was read with an accuracy rate of 90 percent or higher, the reading was followed by a request for the child to retell the story in his or her own words. The decision to ask for the retelling on grade-level material based on pilot study results attempted to control for concept load within higher level texts. The children had been told prior to the reading of each story that they may be asked to tell about the story after reading it. The tester prompted twice after the child stopped the retelling: "Can you think of anything else?"

All testing was completed by Reading Recovery teacher leaders approaching the end of their training year or by experienced teacher leaders and teachers in the field. All text readings, along with retellings, were audiotaped. Retellings were transcribed verbatim.

Teacher questionnaires were collected for all children in both groups. Although classroom teachers were not informed about group membership of the children, it is possible that they were already aware due to prior communication about particular children with Reading Recovery teachers in the school.

Figure 1. **Follow-Up Questions for Classroom Teachers: Second Grade.**

DISTRICT:________________ **SCHOOL:**________________ **TEACHER:**________________

Please complete the following information about ______________________________

1. Check the appropriate ethnic description:
   ____ Anglo ____ Hispanic ____ Other
   ____ African American ____ Asian ____________

2. Is this child ____ male? ____ female?

3. Is this child currently receiving any of the following services? (Check all that apply.)
   ___ Chapter 1 ___ ESL ___ Resource (LD)
   ___ Speech ___ Other ______________________
   (Please describe)

4. In what reading group is this child currently placed? (Circle below) If reading groups are not used, estimate placement if groups were formed.
   Low   Low Average   Average   High   High Average

5. What information did you use to place him/her in this group?

6. What grade did this child receive in reading on the last report card?

7. In what basal reader is this child currently reading? (Circle below.)
   P   P1   PP2   PP3   P   1   2-1   2-2   3-1   3-2   4   5   6

   If no basal is used, what approximate text level is the child currently reading?
   Is there a literature book that would characterize the level at which this child can read?

6. How do you predict this child will perform in third grade as a reader?

7. How do you predict this child will perform in third grade as a writer?

8. Rate the attributes that best describe this child by circling the appropriate numbers.

	Weak				Strong
Reading ability	1	2	3	4	5
Writing ability	1	2	3	4	5
Attitude toward reading	1	2	3	4	5
Attitude toward writing	1	2	3	4	5
Chooses to read when time allows	1	2	3	4	5
Selects books on his or her own	1	2	3	4	5
Independent in class work	1	2	3	4	5
Tries hard	1	2	3	4	5
Completes work	1	2	3	4	5
Attends well in class work	1	2	3	4	5
Responds in group discussions	1	2	3	4	5

9. Other comments

Analyses

Means and standard deviations were used to describe scores of literacy tasks for the two groups. Multivariate analyses of variance (MANOVA) were used to test for significance between the groups on three retelling measures and three fluency measures. Running records for both groups were analyzed for processing behaviors on the oral reading of continuous text. Correlational and descriptive data were analyzed for factors related to teacher perceptions based on responses to questionnaires, as well as literacy and comprehending behaviors.

In contrast with the pilot study, texts representing the end of second grade (level 20) or the beginning of third grade (level 22) were used when possible for analyses of oral reading behaviors, retellings, and fluency. If a child's highest text reading was lower than those levels, the highest level at which the reading accuracy was at least 90 percent was used. Care was taken to remove any mark of group identification on retellings or fluency tapes. All scoring was completed without knowledge of group membership.

As a result of the pilot study, fluency data were analyzed using several predetermined criteria. First, the length of the selection to be analyzed was defined with consideration given to time for comprehending the major ideas and for building momentum. Therefore, all tapes were analyzed at the same point in the text. Some dialogue was included in the level 20 tapes so that fluency could reflect a child's reading of dialogue. Each tape was played twice before scoring unless the fluency was clearly outstanding on all three factors during the first playing.

Interrater reliability for scoring the retellings using Mitchell's (1988b) categories was .81. Using the Zutell and Rasinski (1991) scale, interrater reliability was established at .79 for scoring oral reading fluency. On the fluency scale, raters agreed when scores were at extremes (i. e., scores of 4 and scores of 1 on the 4-point scale). However, differences were noted when scores of 2 or 3 were assigned.

Main Study Results

Performance on Literacy Tasks

Mean scores on three literacy tasks (text reading, dictation, and spelling) are shown in Table 3. When Reading Recovery scores were considered within an average band of the random sample using one standard deviation, Reading Recovery children scored within the average of their second grade peers. The mean text reading level of 26 for Reading Recovery children paralleled a basal reader level of fourth grade. All but three children in the Reading Recovery group were able to successfully read materials at or above second grade level. The random sample group mean text level score of 29 compared with fifth grade level materials. Both groups indicated the ability to read oral passages considered to be above level at 90 percent accuracy or better.

When compared with the pilot study, comparison data on the three literacy tasks revealed similar findings (see Table 2). In both studies, Reading Recovery children had high dictation scores that almost matched those of the random group. Also, in both studies both groups were successfully reading text designated at above grade level.

Oral Reading Analyses

Running records of oral reading behaviors were examined for both groups of children. When possible, levels 20 and 22 (grade-level texts) were analyzed most closely (See Table 1 for explanation of text levels.). The mean accuracy rate for text reading on level 20 was 95.83 percent for Reading Recovery children and 96.55 percent for the random group, revealing no significant differences between groups. If those levels were read with extremely high accuracy rates by an individual child, higher text levels were used in order to observe error and self-correction behaviors. Texts examined were generally read at an accuracy rate of 94-96 percent.

Table 3
Main Study Means, Standard Deviations, and Average Bands for Scores on Literacy Tasks, Retellings, and Fluency Measures

Task	Maximum Score	Reading Recovery (*n* = 54)	Random Sample (*n* = 54)	Average Band (1 SD)
Dictation Task	64	59.35 (3.37)	61.15 (2.92)	58.23-64.07
Spelling	18	12.56 (2.46)	14.57 (2.16)	12.41-16.73
Text Reading	34	26.04 (4.69)	29.51 (4.94)	24.57-34.45
Fluency: Phrasing	4	2.94 (.54)	3.10 (.74)	2.36-3.84
Fluency: Smoothness	4	3.06 (.70)	3.24 (.77)	2.47-4.01
Fluency: Pacing	4	2.87 (.66)	3.16 (.71)	2.45-3.87
Retelling: Text-Based	16	8.01 (2.48)	8.61 (2.42)	6.19-11.03
Retelling: Prior Knowledge	16	4.18 (.72)	4.33 (.82)	3.51-5.15
Retelling: Language/ Organization	8	4.02 (1.37)	4.33 (.82)	3.51-5.15

Attention was given to evidence of the following behaviors: self-monitoring, the detection and self-correction of errors, and use of information sources in errors as well as self-corrections. For both groups, there were generally a high accuracy rate and a high self-correction rate on grade-level texts. Errors that changed meaning were generally self-corrected. However, on higher level texts, both groups tended to shift more to focus at the word level. They appeared to be trying to pronounce difficult words and meaning suffered.

While the reading behaviors for both groups revealed high self-correction rates and meaning-driven construction of text, the Reading Recovery children demonstrated more reading work. There was overt evidence of reading behaviors. For the random group, most of the reading work was not audible but resulted in accurate reading. However, for the Reading Recovery group it was possible to observe the reading process more clearly. For example, there seemed to be more repetitions, self-corrections, and multiple attempts. Interestingly, however, even though there were more overt reading behaviors for the Reading Recovery children, the work must have been processed rapidly because the fluency measure of smoothness was not affected. It is possible, however, that pace was affected by the overt evidence of reading processing by Reading Recovery children.

Retelling Responses

There were three retelling indices: text-based comprehension, reader's response and reaction to text, and reader's language use. MANOVAs showed no significant differences ($p < .05$) between the Reading Recovery children and the random group on any of the three retelling indices or when all three indices were considered together. Retelling data for both groups failed to correlate significantly with the following factors: literacy task scores, teachers' reading and writing predictions, or fluency factors. For both groups retelling data correlated significantly but not strongly with basal reader placement. For the random group, there was a significant though weak correlation between retellings and group placements. Usefulness of correlational data may be questionable due to the limited potential range of scores in categorical data including group placement, and basal/text level placement (See Table 3 for means and standard deviations on retelling data.).

Retelling responses for both groups were generally short and not elaborated. However, most children in both groups revealed the main idea or general theme of the selection. Facts and inferences were generally relevant.

To illustrate the variety of retelling data, some examples follow. The text is about a proud mouse who thinks he is the master of the forest. His uncle warns him that the elephant is the king and will be angry. The mouse goes to find the elephant and meets a lizard, thinking he is the elephant.

Most retellings for both groups indicated an understanding of the topic, the main idea, or the gist of the text. A low scoring, not elaborated example follows:

> *Child:* Okay. Once there was a small proud mouse — that had heard about a big giant elephant. That's as good as I can get it!

The following example represents a typical elaborated story retelling for text comprehension:

> *Child:* Okay. Once there was a mouse and he was so proud he liked to, he liked to show off and, and say that he was the master of this forest until one day his uncle said that the elephant was — had, had heard about his showing off and was mad because he, because he was bigger than him and, and he was the master of the forest and he went off to, to show the elephant he was the master of the forest. Then he came to a lizard and he, and he said, and the mouse said, "Are you the mo . . . the elephant?" And the lizard said, "No." "Well, you're lucky because when, because when I find the elephant, I'm going to break him to bits."

Although most retellings were expressed in their own words, several children offered the language of the book when the comment was particularly unusual. Many children used dialogue in their retellings. The following example demonstrates the child's use of book language and dialogue:

> *Child:* Once there was a, um, a mouse who thinks she was *proud*. One day, uh, his uncle said, "The elephant is angry. So you should not be proud." "I'll teach that elephant." So he, *off he went*. He came to a lizard. The mouse said, "Are you, are you a elephant?" "*No, not I*," said the lizard. "You are lucky. If you were an elephant, *I would break you to bits!*"

There were few retellings that tied the text with the child's prior knowledge or touched affective behaviors. This is not surprising because the prompt did not invite personal comments. An exception follows.

> *Child:* Well, there's an elephant. There's a mouse who thinks he's the master of the forest, and he's going to try to teach the elephant a lesson and he's going to break the lizard into bits."
>
> *Teacher:* Can you think of anything else you want to add?
>
> *Child:* He should've, he should've listened to his, to his, uncle.
>
> *Teacher:* Can you think of anything else you want to add?
>
> *Child:* You shouldn't try to beat up or take up for yourself when the other person's bigger. You should ask somebody to help you or tell the teacher or something.

Although many retellings were fairly nonfluent renderings, generally retellings across both groups were organized sequentially or in a way to be easily understood. Few children volunteered much additional information as the result of a teacher prompt to continue. Testers reported that the retelling task appeared to be uncomfortable for many of the children, possibly because of the lack of familiarity with the task.

When compared with results of the pilot study, retelling data were similar. This is particularly interesting because in the earlier study, retelling data were gathered on the highest level at which the child read at 90 percent or higher. Means were similar across both studies indicating no differences due to text difficulty.

Fluency Behaviors

Three holistic measures of fluency were included in the analyses: phrasing, smoothness, and pace. MANOVAs showed no significant differences ($p < .05$) between groups when fluency was considered as a single factor or when considering phrasing or smoothness as factors. However, there was a significant difference between the two groups on pacing, with the random group demonstrating a faster pace in oral reading of text.

An interesting finding was that fluency mean scores were noticeably higher for both groups in this study (see Table 3) than in the pilot study (see Table 2). The change from fluency ratings based on the highest level text read to fluency ratings based on texts designated as second grade texts seemed to increase oral fluency across groups. Text difficulty seemed to affect fluency for both groups of readers.

Relatively few children were rated as highly fluent on all three dimensions. Fifteen random children had perfect scores on all three dimensions while six Reading Recovery children had perfect scores. Descriptive patterns paralleled those of the pilot study. However, an interesting and unexpected finding was noted. Because several children were not native English-speakers, there were differences in intonation and phrasing patterns. In these cases, discourse patterns did seem to affect the expected fluency patterns making scoring more difficult. These discourse patterns deserve additional attention in future research efforts.

For the Reading Recovery group, fluency scores correlated significantly ($p < .05$) though not strongly with dictation scores, spelling scores, and teachers' predictions for reading progress. Fluency scores for the random group correlated significantly ($p < .05$) with all literacy scores, group and basal placements, report card grades, and teacher predictions for reading progress and writing progress.

Individual data provided insights that were lost with aggregated data. Of the six Reading Recovery children and the 15 random children with perfect fluency scores, teacher predictions for their progress in reading were also very high. Four of the six Reading Recovery children and 11 of the 15 random children with perfect fluency scores also received the highest teacher predictions for progress in reading. Only one child with a perfect fluency score was predicted to have difficulty in third grade. Children in both groups with the lowest combined fluency scores were generally predicted to experience average to low progress in reading. Only three out of 20 children across both groups with low fluency scores were predicted to have above average progress in reading in third grade.

Teacher Perceptions

Data from questionnaires completed by classroom teachers of both groups of children were used to describe teacher perceptions. Results are categorized.

Perceived Need for Continued Services. Descriptive data revealed information about services received by both groups of students during their second grade year. Chapter 1 services were received by four Reading Recovery children and three random children. One child in each group was served in a setting for learning disabilities. Speech services were received by three children in each group, while eight Reading Recovery children and three random children received ESL services.

Reading Groups, Materials, and Report Card Grades. Correlational data were influenced by the narrow range of possibilities within categorical data, with large numbers clustering in the middle range of most categories. Therefore, interpretations of these data must take this limited potential for variance among the sample population into consideration.

Reading group placement did not correlate significantly with any of the literacy tasks for the Reading Recovery group. However, placement in reading groups was significantly correlated with all three literacy tasks for the random group. Most former Reading Recovery children were in average reading group placements, with five children in the lowest group and two in the highest group. In the random group, four children were in the lowest group while 12 were in the highest group. The remainder were in average groups.

Significant, though not particularly high correlations were shown for the random group between basal reader/text level placement and literacy tasks. No significant correlations between basal/text level placement and literacy tasks were shown for Reading Recovery children. Perhaps the correlational data on basal placements are misrepresentative because so many children were placed in on-level materials regardless of text reading performance. Very few children in either group were in material leveled higher or lower than grade level. Of the 54 Reading Recovery children studied, 49 were placed in materials graded at second grade or above. For the random group, 53 of the 54 were receiving instruction at materials leveled at second grade or above. While the relationship between each literacy score and reading report card grades assigned by teachers was positive and significant for the random group, only the text reading score correlated significantly with grades for the Reading Recovery group.

Perceptions and Predictions. On a five-point Likert scale of literacy behaviors and attitudes (see Figure 1), teachers perceived that former Reading Recovery children were within an average range in reading ability; mean score on the five-point scale was 3.0. The ratings for Reading Recovery children clustered in the middle range while ratings for random children showed more children in the higher range. The stratified nature of the random group may have been an influencing factor. Teacher perceptions of writing ability were lower than reading perceptions for both groups.

Classroom teacher predictions for reading progress for the random group correlated significantly and strongly with all other factors except retelling measures. For Reading Recovery children, however, predictions correlated only slightly with spelling and more strongly with group placement, basal placement, reading grade, and writing predictions. In other words, teacher predictions for successful reading progress for Reading Recovery children did not match the child's performance on reading and writing tasks very well. Instead, the correlations were with other measures of teacher perceptions rather than measures of child performance.

Teacher predictions of reading progress of Reading Recovery children revealed a perception of average. Five children were expected to make excellent progress in third grade, five should be closely monitored, and the remainder were expected to make average progress. Seventeen random children were predicted to make excellent progress, five should be closely monitored, and average performance was predicted for the others. For both groups, teachers perceived children to be stronger in reading than in writing. Their comments, however, indicated considerable differences among teachers' notions of writing.

Additional descriptive data were analyzed from teacher comments on questionnaires from second grade teachers. Specifically, comments were examined to determine any behavioral trends among those children in either group who were perceived by the teachers to be less successful in literacy tasks. The following general categories emerged. Specific descriptors by teachers are in quotations after each category:

1. speed: "pacing," "slow;"
2. focus: "focusing on task," "attention span, " "gives up," "doesn't apply himself;"

3. personal behaviors: "motivation," "emotional problems," "immaturity," "absenteeism," "work habits," "unpredictable behaviors," "talkative;" and

4. skills: "comprehension," "vocabulary," "mastery of skills," "study skills," "low grades." Very few of the teacher comments about children perceived by the teacher as less successful were directly related to literacy behaviors.

Discussion

Literacy Measures

Based on findings in both the pilot study and the main study, it appears that discontinued Reading Recovery children sustain their literacy gains at least a year or more after receiving Reading Recovery. They are able to read materials at or above their grade level and compare well with their peers on three literacy measures: text reading, dictation, and spelling.

Consideration should be given to additional or revised instruments for measuring literacy behaviors in future studies. The mean text scores in this study were extraordinarily high for both groups. An examination of appropriate assessment texts/passages seems to be in order. Additional literacy assessments may include some standardized measures, including assessment of responses to silent reading tasks.

Comprehending Measures

On measures of oral reading analysis, retelling tasks, and fluency scores, Reading Recovery children appear to compare well with their classroom peers at the end of their second grade year. Oral reading analyses indicated that both groups were reading for meaning. There were no significant differences between the two groups on the comprehensive measures of retelling or fluency tasks, although there was a difference between the two groups on the pacing factor within fluency measures.

Oral Reading Behaviors on Continuous Text. Analyses of oral reading behaviors through running records support the usefulness of the instrument for making inferences about what children are attending to and comprehending based on the kinds of errors and self-corrections they make (Clay, 1993a). From oral reading analyses, it can be argued that both groups of children were reading for meaning and strategically problem-solving on text. If evidence of "reading work" moves across a continuum of overt to covert, Reading Recovery children were still operating at a more overt level than random group children whose reading behaviors were more covert. Although pace may have been affected slightly, the important issue is that the former Reading Recovery children were able to engage in reading work and problem-solve successfully on text. The intricate relationship between reading work and fluency will be discussed later in this section.

Use of the running record, along with other instruments for systematically observing the reading behaviors of children, should enable teachers to continue to monitor these children who were initially hard to teach. Observations of children's reading work allow teachers to make specific decisions about how these children view the reading process, what strategic behaviors they control, and in what areas they continue to need supportive instruction.

Retelling Behaviors. Former Reading Recovery children seem to compare well with their peers on oral retelling tasks. However, correlations between retelling measures and other factors were low and insignificant. Interestingly, in spite of the lack of correlation of retelling factors with other literacy and perception factors, children in both groups seem to be able to report the *big picture*—either the topic, the theme, or the main idea of the selection. It is also interesting that mean scores on retelling factors in this study were similar to mean scores in the pilot study. Pilot scores were based on the highest level read at 90 percent accuracy or better, while scores for the study were based on grade-level materials. Text difficulty, as controlled in these studies, did not seem to be a factor in explaining the phenomenon of retelling data.

Future studies should take into account some of the problems noted with retelling data in the present study. First, most of the children in both groups did not appear to be familiar with the task. Supporting Johnston's (1992) concern, they may have also seen the task as socially inappropriate, without a logical audience for the retelling. The testers did not elicit anything but text-based information, and the scores represented only one passage type—fanciful fiction.

Future studies, then, should include various ways of eliciting children's understandings. Retellings with appropriate audiences (Johnston, 1992) and engagement activities (Tierney, 1990) are two possibilities for consideration. Refinement of rubrics and scoring procedures for these interactive tasks is also needed.

Fluency Behaviors. Findings in this study indicated that former Reading Recovery children compare well with their second grade peers on fluency indicators with the possible exception of pace. Phrasing and smoothness were similar for both groups. In both groups, children's fluency scores were highest when text levels were near grade-level assignments. This finding indicated that fluency is influenced by text difficulty and supports the need for appropriate texts (Allington, 1983; Clay, 1991, 1993b).

Interestingly, in the pilot study there was no difference between groups on pace when the text level was much higher; both groups of children responded similarly to materials leveled considerably above their grade level placement. Also, the reading work of Reading Recovery children as evidenced through running record data may have influenced pace. Perhaps the evidence of problem-solving on novel text should supersede attention to fluent oral reading at this time for these children.

As indicated earlier, the relationship between fluency and comprehension is a complex one. While there seems to be general agreement that oral reading fluency has become a feature in defining good reading, the role of oral reading fluency in comprehension is ambiguous (Allington, 1983; Dowhower, 1991). Dowhower argued that there is a relationship between fluency and comprehension, but that we are not sure which comes first or if one is necessarily an indicator of the other. Based on Clay's work, DeFord (1991) suggested that rather than just increased pacing of text reading, the role of fluency involves the use of all information sources in the reading process flexibly. It is this flexibility which promotes more fluent processing in general, in turn, facilitating fluency in oral reading.

The scoring of oral reading fluency behaviors is also problematic. Although the scale used in this study was multidimensional, it failed to appropriately account for such dimensions as prosodical features—reading in expressive rhythmic and melodic patterns. Further, fluency measures in this study were obtained only on the first reading of novel text. Findings in this study also revealed that children whose first language is not English often display different prosodical patterns than native English-speakers. Considering the multitude of linguistic differences, fluency is a difficult behavior to assess.

It seems that there are three major areas of discussion about fluency resulting from the findings in this study:

1. Is fluency a suitable variable for study? Is there a generally accepted definition? Does the term confuse people? Are measures of fluency probing surface level factors, without revealing underlying processes within the reader? Perhaps the complexity of the notion of fluency is reflected in DeFord's (1991) six factors that "may impinge upon the fluent use of the reading process: (a) the material being read, (b) the flexibility of the reader's strategies, (c) the reader's knowledge about the topic, (d) the match between the language of the reader and that of the author, (e) the reader's purposes, and (f) other contextual factors" (p. 203). Simplistic definitions of fluency tend to ignore the complex relationships of these factors with fluent processing of text.

2. Fluency is very difficult to measure. The measures used in this study were clearly not comprehensive. Again, measures will be elusive as long as there is no accepted definition of fluency.

3. In spite of the lack of evidence linking fluency and comprehending, results of this study suggest that classroom teachers are influenced by children's fluency on oral reading tasks. There were significant correlations between classroom teachers' predictions for reading progress and scores on fluency measures for both groups. The correlations are even stronger when examining individual data as opposed to aggregated data. According to Lipson and Lang (1991), judgments about reading ability are frequently made on the basis of oral reading fluency. Placement and group decisions also emanate from these judgments. Readers who are not fluent often find themselves relegated to the low reading group for instruction (Hoffman & Isaacs, 1991).

If fluency has a strong influence on readers and their teachers, it seems important to consider classroom practices for promoting fluency. The following list represents a composite of frequently suggested practices (Allington, 1983; Askew, 1991, 1993; Clay, 1991, 1993a, 1993b; DeFord, 1991; Dowhower, 1987): (a) teacher modeling of good expressive reading through read-alouds and shared readings, (b) meaning oriented instruction, (c) increased opportunities for reading, (d) rereading of familiar text, and (e) selection of appropriate texts. One practice that has received wide attention in the literature is that of rereading familiar texts (Allington, 1983; Dowhower, 1987; Herman, 1985; Rasinski, 1990; Samuels, 1979). Dowhower (1987) reported evidence that multiple readings resulted in improved rate, accuracy, comprehension, and prosodical readings among second grade transitional students.

Askew (1991, 1993) found that first graders' control over strategic behaviors increased across multiple readings of familiar text. Findings revealed that (a) evidence of monitoring, error detection, and self-correction behaviors increased as text became more familiar; (b) children began to take more initiative in solving problems with each reading of the text; and (c) fluency or flexibility in using all information sources increased dramatically across multiple readings of texts.

Although the term repeated reading is generally used in the literature, Clay (1991) used the term familiar reading to refer to the revisiting of books previously read. She argued that children should practice the skills that they have on easy materials and build up fluency, as defined by the orchestration of flexible processing (Clay, 1991):

> If children can return frequently to reread a wide variety of familiar material they have two opportunities: first, to orchestrate the complex patterns of responding to print just as the expert musician practices the things he or she knows; and second, to read those texts with increasing levels of independence. (p. 184)

Clay (1993a) further suggested that readers need opportunities to engage in two types of reading: (a) successful performance on familiar text which strengthens the decision-making processes of the reader and (b) independent problem-solving on new and interesting texts with supportive teaching. Reading Recovery lessons include both opportunities daily. Classroom opportunities for both types of reading should affect both fluency and problem-solving on text.

Teacher Perceptions

A major implication of this study is that teacher perceptions about literacy and literacy learners are important. In many instances, the literacy performances of children in both the Reading Recovery and random groups did not match the teachers' perceptions of literacy abilities. Perhaps the nature of the questionnaire influenced the responses of teachers. Perhaps there are flaws in the literacy measures, or perhaps other factors were at work (Wood, 1988):

> When teachers are asked to evaluate a child's likely potential in a particular subject or discipline, their answer is likely to relate to a specific feature of the child's classroom behavior: the child's willingness or capacity to concentrate on tasks relevant to that subject. Those children who spend most time on task in the classroom are most likely to be judged capable of doing well in the subject or discipline being taught. More importantly, if we

> monitor the children's progress we will find that teacher predictions are, more often than not, borne out. (pp. 55-56)

Wood proposed that children may be limited because they do not possess the relevant experience and expertise needed for success. Children are often able to perform, with help, tasks that they are unable to perform alone. These gaps between unassisted and assisted competence are referred to as the zone of proximal development (Vygotsky, 1978).

Teachers who apply the expert-novice metaphor in their teaching help children to construct their own expertise. Well-built scaffolds help children to learn how to achieve heights they are unable to scale alone (Wood, Bruner, & Ross, 1976). The teacher's role continues to be crucial throughout the academic lives of children.

Attention and concentration are not natural capacities that can be used to account for a child's inability to succeed on school tasks (Wood, 1988). Rather, processes of self-regulation include aspects which have to be learned. Children may seem to be incompetent when they are still struggling with the problem of making sense to other people. Children's learning takes time and creates challenges for them and their teachers. When school demands on children are greater than their current level of understanding, we cannot expect to find the child focusing on what is being said and done. Therefore, attention should be given to the match, or mismatch, between what children understand and what they are being required to do. Teachers' sensitivity to these notions may significantly reduce the number of children who are regarded as unsuccessful.

In this study, teachers' perceptions and predictions may have been influenced by an educational phenomenon that can occur when the *bottom* is removed. Because teachers in these studies were forced to rank children on numerical scales, it is possible that ratings were relative to current perceptions of the comparative performance of the members of the class. Children perceived as low may have been labeled as such due to their relative performance in a classroom. Persistence of old concepts may be keeping teachers from realizing how close to average these children are actually operating. Additional study from multiple perspectives is needed relative to classroom perceptions about literacy behaviors of children.

Challenges

The following challenges to teachers, administrators, and researchers may help to contribute answers to Clay's (1993b) question, "What is possible when we change the design and delivery of traditional education for the children that teachers find hard to teach?" (p. 97).

As in this study, when most children are performing satisfactorily on grade-level literacy tasks, classroom teachers are facing a new concept of average. All of the former Reading Recovery children studied here began their first grade year with the lowest literacy profiles in their classrooms. Accelerated progress in Reading Recovery resulted in successful performance wthin the average range in a classroom setting as measured by a range of assessments. That does not mean that all students are alike. The results of this study reveal that the idea of average is a complex one. It may be that programs like Reading Recovery push the curve so that the lower group is removed, and a large group make up the mainstream of classroom work, with a few children moving out ahead. In this situation a new concept of average may be considered, not as the exact middle of any one group of children, but as gathering up children to progress together, bringing their different competencies to bear on the curriculum, with no one being left behind. When all children are full participants in the mainstream of classroom education, individual differences can most readily be noticed, and when necessary, given special attention.

A new and exciting dialogue among teachers is needed to focus on the success of these children rather than on old expectations that some children must be classified as low. Opportunities to collaborate on children's strengths, to explore potentially biased perceptions of children, and to problem-solve on the scaffolds needed by children to support their continuing learning should be the challenge for educators.

It is important to acknowledge that the former Reading Recovery children in both of these studies continued to work effectively within the average band of their grade-level peers. The accomplishment of these children does not preclude the need for teacher attention and support, especially when facing novel tasks. Learning how to learn, think, and communicate is related to the acquisition of various kinds of expertise. If instruction is at the heart of human development (Vygotsky, 1978), the teacher's role as expert is a critical component of schooling and it must continue throughout a child's educational experience.

There are also challenges to the researchers. Follow-up studies with children previously served by Reading Recovery are needed that continue to look at comprehensive measures across diverse populations. Future studies may need to include some standardized measures as well as some classroom observation case studies. Because of the impact of classroom teacher perceptions, it is crucial to explore the behaviors of children in classrooms as well as the behaviors of classroom teachers with children of differing needs.

In all follow-up studies of early intervention programs, care must be taken not to attribute the literacy success or failure of children to any one single factor. Although external social, linguistic, and cultural factors must be considered, it is most crucial to continue to explore the factors for which schools can be held responsible. While searching for those factors, opportunities for children to experience early literacy success must continue (Slavin, Karweit, & Wasik, 1992):

> Success in the early grades does not guarantee success throughout the school years and beyond, but failure in the early grades does virtually guarantee failure in later schooling. If there is a chance to prevent the negative spiral that begins with early reading failure from the start, then it seems necessary to do so. (pp. 11-12)

Although it is the responsibility of the school to offer supportive and appropriately challenging opportunities for all children, the responsibility is perhaps greatest for those children for whom the road to literacy has been more difficult. The challenge is there for all educators. The systemic changes brought about by successful early intervention may be just beginning.

References

Allington, R. L. (1983). Fluency: The neglected reading goal. *The Reading Teacher, 36*, 556-561.

Askew, B. J. (1991). Analysis of the comprehending process within the setting of Reading Recovery lessons: New insights. In S. McCormick & J. Zutell (Eds.), *Learner factors/teacher factors: Research and instruction* (pp. 229-237). Chicago: National Reading Conference.

Askew, B. J. (1993). The effect of multiple readings on the behaviors of children and teachers in an early intervention program. *Reading and Writing Quarterly, 9*, 307-315.

Clay, M. M. (1982). *Observing young readers.* Portsmouth, NH: Heinemann.

Clay, M. M. (1990). The Reading Recovery programme, 1984-1988: Coverage, outcomes and education board district figures. *New Zealand Journal of Educational Studies, 25*, 61-70.

Clay, M. M. (1991). *Becoming literate: The construction of inner control.* Portsmouth, NH: Heinemann.

Clay, M. M. (1993a). *An observation survey of early literacy achievement.* Portsmouth, NH: Heinemann.

Clay, M. M. (1993b). *Reading Recovery: A handbook for teachers in training.* Portsmouth, NH: Heinemann.

Clay, M. M., & Imlach, R. H. (1971). Juncture, pitch and stress as reading behavior variables. *Journal of Verbal Behavior and Verbal Learning, 10*, 133-139.

DeFord, D. E. (1991). Fluency in initial reading instruction: A Reading Recovery lesson. *Theory into Practice, 30*, 201-210.

DeFord, D. E., Lyons, C. A., & Pinnell, G. S. (Eds.) (1991). *Bridges to literacy: Learning from Reading Recovery.* Portsmouth, NH: Heinemann.

DeFord, D. E., Pinnell, G. S., Lyons, C. A., & Place, A. W. (1990). *The Reading Recovery follow-up study* (Technical Report, Vol. III). Columbus: The Ohio State University.

Dowhower, S. L. (1987). Effects of repeated reading on second grade transitional readers' fluency and comprehension. *Reading Research Quarterly, 22*, 389-406.

Dowhower, S. L. (1991). Speaking of prosody: Fluency's unattended bedfellow. *Theory into Practice, 30*, 165-175.

Garcia, G. E., & Pearson, D. P. (1991). The role of assessment in a diverse society. In E. H. Hiebert (Ed.), *Literacy for a diverse society* (pp. 253-278). New York: Teachers College Press.

Goodman, K. S. (1985). Unity in reading. In H. Singer & R. B. Ruddell (Eds.), *Theoretical models and processes of reading*, (pp. 813-840). Newark, DE: The International Reading Association.

Herman, P. A. (1985). The effect of repeated reading on reading rate, speech pauses, and word recognition accuracy. *Reading Research Quarterly, 20*, 553-565.

Hoffman, J. E., & Isaacs, M. E. (1991). Developing fluency through restructuring the task of guided oral reading. *Theory into Practice, 30*, 185-194.

Irwin, P. A., & Mitchell, J. N. (1983). Assessing retelling assessments: Review and analysis. Unpublished manuscript.

Johnston, P. H. (1992). *Constructive evaluation of literate activity*. New York: Longman.

Leu, D. J. (1985). Oral reading error analysis: A critical review of research and application. *Reading Research Quarterly, 17*, 420-437.

Lipson, M. Y., & Lang, L. B. (1991). Not as easy as it seems: Some unresolved questions about fluency. *Theory into Practice, 30*, 218-227.

Lyons, C. A., Pinnell, G. S., & DeFord, D. E. (1993). *Partners in Learning: Teachers and children in Reading Recovery*. New York: Teachers College Press.

Mitchell, J. N. (1988a). *Procedures for using retellings for assessment and instruction*. Unpublished manuscript.

Mitchell, J. N. (1988b). *The reader retelling profile: Using retellings to make instructional decisions*. Unpublished manuscript.

Pinnell, G. S., Lyons, C. A., DeFord, D. E., Bryk, A. S., & Seltzer, M. (1994). Comparing instructional models for the literacy education of high-risk first graders. *Reading Research Quarterly, 29*, 8-38.

Rasinski, T. V. (1990). Effects of repeated reading and listening-while-reading on reading fluency. *Journal of Educational Research, 83*, 147-150.

Samuels, S. J. (1979). The method of repeated readings. *The Reading Teacher, 32*, 403-408.

Slavin, R. E., Karweit, N. L., & Wasik, B. A. (1992). Preventing early school failure: What works? *Educational Leadership, 50*, 10-19.

Slayter, F. Z., & Allington, R. L. (1991). Fluency and the understanding of texts. *Theory into Practice, 30*, 143-148.

Tierney, R. J. (1990). Redefining reading comprehension. *Educational Leadership, 47*, 37-42.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press.

Wood, D. (1988). *How children think and learn: The social contexts of cognitive development*. Cambridge: Basil Blackwell.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem-solving. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 17*, 89-100.

Zutell, J., & Rasinski, T. V. (1991). Training teachers to attend to their students' oral reading fluency. *Theory into Practice, 30*, 211-217.

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READING RECOVERY AND LEARNING DISABILITY: ISSUES, CHALLENGES, AND IMPLICATIONS

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The Ohio State University

LITERACY,
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FOR TWENTY-FIVE YEARS THE LEARNING DISABILITIES (LD) FIELD HAS BEEN driven by three fundamental questions: What is a learning disability? Who are the learning disabled? What kind of instruction will help them? Countless articles have been written and research studies have been conducted to address these questions, which remain unanswered. Why? The educational community, researchers, practitioners, and professional organizations (e. g., Association for Children with Learning Disabilities (ACLD), Council for Exceptional Children (CEC), Orton Dyslexia Society) cannot agree on how to: (a) to define the concept, (b) differentiate among various learning problems to classify students, (c) design effective educational programs for LD students, and (d) design staff development programs that enable teachers to learn how to help low achieving students. According to Adelman (1992), experts in the field are having difficulty reaching consensus because they have not developed a theory-based classification scheme, diagnostic criteria, assessment procedures, and effective programs. While the LD field struggles with the many issues resulting from a concept that is hard to define and describe, the number of students considered learning disabled is skyrocketing. Figures reported by the U. S. Department of Education (1990) indicated that from 1976 to 1986, students labeled LD grew from approximately 800,000 representing 22 percent of the special education population to 1.9 million, or 43 percent of the special education population (Singer & Butler, 1987).

There is, however, a well researched intervention program, Reading Recovery, developed in New Zealand by Marie M. Clay (1985), that has substantially reduced the number of children referred for ongoing services. According to figures from the New Zealand Department of Education (1988), the lowest 21.24 percent of the 6 year-old age cohort were served by Reading Recovery and .8 percent of these children were referred for special needs programs (Clay, 1990). Data collected in Ohio during a five year period revealed that less than one percent of Reading Recovery program students were referred to specialists for LD screening (Table 1). These data suggest that Reading Recovery has the potential to reduce the burgeoning number of students diagnosed as LD in the United States.

The phenomenal success of Reading Recovery may be the result of over thirty years of research and development. Clay's understanding of literacy learning is based on approximately ten years of close observation of children engaged in reading work, careful observation of superb teaching, and the study of seminal and recent research provided by a number of scholars and experts in the profession (Clay, 1991). Clay offered the following explanation of literacy acquisition:

> A theory emerges which hypothesizes that out of early reading and writing experiences the young learner creates a network of competencies which power subsequent independent literacy learning. It is a theory of generic learning, that is, learning that generates further learning. The generic competencies are constructed by the learner as he works on many kinds of information coming from the printed page in reading or going to the printed page in writing. (p. 1)

Table 1

Reading Recovery program Children in Ohio Referred for LD Screening 1988-1993

	88-89	89-90	90-91	91-92	92-93
Reading Recovery program children	3344	3994	4336	4652	5091
Reading Recovery program students referred for LD screening	42 (1.26%)	26 (0.65%)	32 (0.74%)	35 (0.75%)	26 (0.51%)

As the preceding quotation suggests, Clay engaged in the necessary conceptual and empirical work to develop the program; something researchers and experts in the LD field are charged with failing to do (Adelman, 1992; Stanovich, 1991).

Perhaps an examination of the theories and principles that underpin the Reading Recovery program will provide helpful insights into how to respond to the issues and challenges faced by practitioners and researchers in the LD field and enable the field to move forward. The purpose of this article is threefold: first, to address the questions and issues raised by recognized scholars in the LD field (Aram, Morris, & Hall, 1992; Moats & Lyon, 1993; Seigle, 1992) from a Reading Recovery perspective; second, to respond to Adelman's (1992) challenge to provide demonstration projects that encompass a comprehensive approach to learning disability; and third, to make recommendations for the future of Reading Recovery and learning disability in the United States.

Addressing Major Questions and Issues

What is Learning Disability?

After thirty years of debate, there is still no universally accepted definition of a learning disability (LD). Further, there is dissatisfaction with prevailing definitions because practitioners and researchers continue to use a variety of descriptors to define the concept. The main issue is how to differentiate LD from underachievement. A discrepancy formula predicated on mismatches between intelligence and achievement is typically used. Many researchers (Fletcher, 1992; Rispens, Van Yperen, & van Dujin, 1991; Stanovich, 1991) argued that using a discrepancy formula is irrelevant to the definition of learning disabilities. Clay (1987) supported this contention and argued that the term learning disability defies definition. Program evaluation data collected during a two-year period in Ohio confirm that the discrepancy formula does not adequately define LD.

In 1985-86, 66 percent and in 1986-87, 80 percent of the first grade children who prior to receiving Reading Recovery were classified as LD by interdisciplinary teams of school professionals, were released from the program reading with the average of the first grade class (Lyons, 1989) (Table 2). These data suggest that it is not possible to distinguish first grade students who are underachieving from those who are learning disabled in order to define the concept.

Table 2
Program Children in Ohio Classified as LD Prior to Receiving Reading Recovery and Discontinued (Released) from the Program Reading with the Average of the Class

	1985-86	1986-87
Program students	110	1130
Program students classified as LD*	35 (32%)	110 (10%)
RR program students classified as LD released from the program reading with average first graders	23 (66%)	88 (80%)
RR program students referred for LD screening	12 (34%)	22 (20%)

Note. *Children classified as learning disabled by interdisciplinary teams of school professionals prior to receiving Reading Recovery.

An alternative point of view may be that children enter first grade with different profiles of achievement because they have had different and varied preschool experiences. For the majority of first grade students, literacy begins early—long before they encounter formal schooling. They have listened to and discussed thousands of stories. They have had many opportunities to read, respond to, and write their own messages. Family members have provided many literacy lessons every day in response to their early attempts to read and write; experiences that will benefit them greatly before they enter kindergarten.

Other children, for a variety of reasons enter school with limited knowledge about literacy and are behind their classmates in reading and writing ability. These children have experienced few literacy lessons. Nobody read to them or helped them write their names. They have had limited opportunities to read or write because there were few books or paper in their homes. While they could express themselves using language and participate in oral stories, they had few opportunities to respond to written language in the form of stories or poems or draw a picture to express themselves. No one served as a model, provided reading and writing materials, demonstrated their use, or offered support as they attempted to read and write. These children have not had literacy experiences that build school valued skills which are necessary for first grade instruction (Heath, 1983; Taylor, 1991). These children, however, are often targeted to receive Reading Recovery. Do they have a learning disability?

Clay's (1991) research indicated that during formal schooling there is a period of transition that may last a few days for some children but several months for others. During this time, children gradually change from nonreaders to beginning readers each in his or her own way and own time. This concept of a time for transition when preschool behaviors change into new forms of responding suggests that within a first grade classroom there are wide variations in patterns of progress. This transition occurs no matter what the approach to beginning reading instruction (e. g., whole language, phonics, literature based, and/or basal). Children are active learners changing over time within their contexts at home, in school, and in the community. Those who enter school with limited knowledge about literacy have more catching up to do in order to benefit from regular classroom instruction.

In 1992-1993, Reading Recovery teachers in approximately 3,800 schools throughout North America served almost 37,300 children. For all these replications, the success rate remained high, with the average percent released from the program reading with the average of the class ranging from 83 percent to 87 percent (Lyons, Pinnell, & DeFord, 1993). Perhaps Reading Recovery should be designated as a prereferral or first net program for first grade students who are having academic or learning difficulties. Then children, who after an extended time in the program do not make progress, would be referred for a specialist's evaluation. This procedure would reduce the number of children misclassified as LD, while distinguishing students with more difficult learning problems who need specialized long-term programs. This approach would enable researchers and practitioners to differentiate between underachievement caused by neurological dysfunctioning and that caused by environmental factors, and in the process would contribute to a better definition of learning disability.

Who are the Learning Disabled?

Since a wide range of individual definitions have been employed in the identification of LD students, it is little wonder that our nation's school districts vary in the ways of determining which students are learning disabled. Federal regulations developed in accordance with the implementation of P. L. 94-142, the Education for All Handicapped Children Act (EHA), advocated the diagnosis of learning disability in terms of process deficits in the presence of average or above average intelligence along with performance assessments in reading, writing, spelling, and math. The process deficits are measured by a battery of tests adapted from various instruments that assess auditory, visual, perceptual, spatial, and motor coordination. In spite of criticism from experts in the field these tests are still used extensively (Algozzine & Ysseldyke, 1986; Fletcher, 1992).

Government policy (P. L. 94-142) stated that the learning disabled are individuals who have a severe discrepancy between intellectual ability and achievement in one or more specific areas. In the state of Ohio, the term does not apply to "children who have learning problems which are primarily the result of a visual, hearing, or motor handicap, mental retardation, emotional disturbance, or environmental, cultural, or economic disadvantage" (Ohio Department of Education, 1983, p. 3). It is generally agreed that a severe discrepancy occurs when the student's score on the intelligence test is higher than his or her score on the achievement test by some specified amount. In Ohio, a discrepancy score that is equal to or greater than two years is generally accepted as reflecting a severe discrepancy.

A procedure for determining the existence of a severe discrepancy between intellectual ability and achievement has not been specified at the federal level or at most local levels (Gartner & Lipsky, 1987). Consequently, methods for making this determination have varied widely across states and school districts within each state. According to Stanovich (1991), any individual with any learning problem can be diagnosed as learning disabled. Because of this identification problem, many low progress readers who do not have a disability are treated as if they do.

Subtests designed to measure student's processing are not the only measures that have been criticized for diagnosing a learning disability. Developmental and educational psychologists generally agree that IQ test scores do not measure an individual's potential in any sense and are irrelevant to identification and analysis of learning disability (Seigel, 1989) or reading disability (Seigel, 1988). Stanovich (1991) argued that discrepancy definitions of reading disability have led educators astray:

> Thus, to the extent that IQ scores were viewed as measures of potential, the practice of diagnosing dyslexia (reading disability) by measuring discrepancies from IQ scores was misconceived from the beginning. In short, we have been basing systems of educational classification in the area of reading disabilities on special claims of unique potential that are neither conceptually nor psychometrically justifiable. (p. 10)

Perhaps it is time to stop relying on process deficit tests, IQ tests, standardized reading tests, scores on reading readiness tests, discrepancy scores, and reading age when selecting students who are in need of specialized help. It would be better to help teachers become careful observers and recorders of young children's early attempts to learn how to read and write. Recent research (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994) revealed that the teacher's ability to observe, analyze, and follow the lead of the child while he or she is engaged in reading and writing tasks and be ready to shift as the child extends capacities is a critical context element in helping low achieving first grade students become successful readers and writers. The most effective teachers change their behaviors in response to children's behaviors.

Clay (1985, 1993) developed an Observation Survey that enables teachers to observe how children engage in reading and writing tasks and note their successful and unsuccessful responses. The observation tasks include (a) running records, (b) letter identification, (c) concepts about print, (d) word tests, (e) writing, and (f) hearing sounds in words (dictation). The six subtests, none of which is sufficient on its own to measure a student's abilities, provide a foundation for what the child has already learned and what he or she needs to learn next. "In complex learning, what is already known provides the learner with a useful context within which to embed new learning" (Clay, 1993, p. 20).

The most important question teachers can ask students, regardless of their ages, is, "What do you know about . . . ?" If teachers do not know what students know and can do, how can they expect to help students construct new understandings? Generally speaking, first grade children have difficulty telling adults what they know. The Observation Survey is a tool for enabling children to demonstrate what they understand about the reading and writing process. It is used by teachers to distinguish among a variety of learning problems. While the Observation Survey does not answer the question, "Who are the learning disabled?" directly, it provides a needed framework for specifying the learning needs of individual students. Then, based on this information teachers can design and implement more effective intervention programs.

What Kind of Intervention Will Help the Learning Disabled?

The third question plaguing the LD field has been more illusive and difficult to answer because researchers and practitioners have not been able to define learning disability or describe and explain differences among low achieving students' learning processes. According to Adelman (1992), "The scope of misdiagnosis and misprescriptions in the field has undermined prevention, remediation, research, training, and the policy decisions shaping such activity" (p. 17).

An extensive body of research supported Adelman's (1992) claims. Gartner and Lipsky (1987), Slavin and Madden (1989), and Allington and Walmsley (in press) documented the general ineffectiveness of learning disability and reading disability programs. The research also suggested that once elementary students are placed in instructional support programs, most often remedial (Chapter 1) or special education (learning disability), they generally remain on the remedial track for a lifetime, rarely outgrowing their disability (Allington & McGill-Franzen, 1989). Yet in America we are continuing to identify primary children as LD and place them in LD programs that have no or limited success. There is little expectation that these students will ever be able to keep up with their peers in regular education classrooms in spite of the fact that the U. S. Office of Education encourages general educators and special educators to make a significant effort to find inclusive solutions for children considered to be LD (Rogers, 1993).

Researchers examining special education and remediation programs (McGill-Franzen & Allington, 1991; Moats & Lyon, 1993; Slavin & Madden, 1989) called for comprehensive programs to help low achieving students learn how to read. Adelman (1992) developed a framework representing a continuum of programs beginning with early age prevention to treatment for chronic problems and challenged the field to design comprehensive demonstration projects that have preventative and corrective implications for a wide range of learning and behavior problems. An examination of longitudinal data collected in ten U. S. school districts that have recently implemented Reading Recovery, as well as Reading Recovery program evaluation data collected over a six year period in two Ohio school districts revealed that there is a comprehensive demonstration project that responds to Adelman's challenge.

Meeting the Challenge

The National Study

In a study conducted in ten school districts representing urban, suburban, and rural areas, Schmidt (1993) found that prior to Reading Recovery, 2.3 percent of the first grade population was referred to LD resource rooms. After Reading Recovery was implemented in the ten school districts, 1.3 percent of the first grade students were placed in LD classrooms (Table 3).

The reduction in the number of students placed in LD resource rooms over the two year period is impressive. What is more impressive, however, is the fact that this reduction was evident in spite of the fact that only 10 percent of the first grade students was served by Reading Recovery during year one and 14 percent of the population was served during year two. As more teachers are trained, the percentage of coverage will increase and as a result fewer students should be referred for LD services.

The Suburban Study

Approximately 400 first grade children are enrolled annually in the five elementary schools in a suburban Ohio school district. The majority of those students learn how to read and write easily. However, approximately one out of every eight experiences difficulty in learning how to read in the primary grades. Prior to implementation of the Reading Recovery program in 1986-87, teachers had adopted a wait-and-see attitude. But after several years of waiting and providing children many opportunities to read and write, they realized that the longer they waited, the further the children fell behind. Reading Recovery program evaluation data revealed that waiting was not the answer. In the eight years (1986-1993) the program had been operating in this school district, 70 percent to 86 percent of the lowest achieving first grade readers reached average reading levels and continued to make progress with regular classroom literacy instruction. As reported in Table 4, the percentage of Reading Recovery program students classified as LD and placed in LD resource rooms decreased significantly over the five year period.

Follow-up data (Lyons & Beaver, in press) revealed that the majority of the students served in LD resource rooms were not receiving additional help in reading. One student was phased out of the LD program at the end of fourth grade. These data suggest that when Reading Recovery is used as a prereferral program, it is possible to target students who are in need of more intensive specialized help.

Table 3

First Grade Students in Ten U. S. School Districts Referred to Learning Disability Services Prior To and After One and Two Years of Reading Recovery Implementation

	Prior to RR	RR Year 1*	RR Year 2
Total number of first grade students	2569	2602	2572
Number of first grade students referred for LD services at the end of first grade	59 (2.3%)	53 (2%)	34 (1.3%)

Note. *Year 1 refers to the year teachers were learning to become RR teachers.

Table 4

Suburban School District: Reading Recovery program 1986-1991

	1986-87	1987-88	1988-89	1989-90	1990-91
Grade 1 enrollment	340	369	404	391	406
Reading Recovery program students*	22	36	41	42	66
Reading Recovery program students classified LD**	8 (36%)	16 (44%)	12 (29%)	8 (19%)	6 (9%)

Note. *Program students are defined as completing 60 lessons or discontinued prior to 60 lessons. The number of program students served increased as more RR teachers were trained. Initially only one RR teacher was assigned per building; in 1991, there were two teachers per building.

**RR students identified using district and state criteria as learning disabled. No student received both programs at the same time. RR was always implemented prior to the LD program except in a few cases. Less than .05 percent of the children from the total population of first grade students over a five year period were identified to receive LD services rather than RR services prior to Kindergarten and/or first grade.

The Urban Study

In an urban school district, nine elementary schools served approximately 700 first grade students every year. General education and special education district administrators decided that Reading Recovery had the potential to reduce the growing number of first grade children referred to learning disability classrooms.

Figures reported by the U. S. Department of Education (1990) revealed that prior to full implementation, 1.8 percent of the first grade enrollment was placed in LD resource rooms (Table 5). Once Reading Recovery became a prereferral program, that is, low achieving first grade children received Reading Recovery before they were referred for LD screening, the percentage of children classified as LD was reduced to .64 percent. A cost-benefit analysis (Lyons & Beaver, in press) revealed that because the number of first grade students referred for LD placement had been reduced by two-thirds, the school district had saved approximately $100,000 annually.

Table 5

Urban School District: Grade One Students Placed in LD Classrooms Prior To and After Reading Recovery

	1984-1987 (3 Years) Prior to RR Implementation**	1987-1991 (4 Years) After Partial Implementation*
Grade 1 enrollment	1781	1573
Number of students placed in LD	32 (1.8%)	10 (.64%)

Note. *Partial implementation (1987-1988): .08 percent of the first grade population served by nine RR teachers (one RR teacher assigned to each of the nine elementary buildings).

**Full implementation (1988-1991): Sixteen percent in 1988-89 and 20 percent from 1989-91 of the first grade population served by 15 RR teachers (one or two RR teachers assigned to each of the nine elementary buildings).

Program evaluation data collected in these suburban and urban school districts demonstrated that district-wide projects did incorporate prevention, early intervention, and more specialized help for first grade students having learning problems. The results of these evaluations constituted a response to Adelman's (1992) challenge:

> The data from the demonstration project could have major cost-benefit and policy implications for decisions about how to reverse the current overemphasis on special education programs so that limited resources available can be reserved for students who manifest severe and pervasive psychoeducational problems. (p. 21)

Conclusion

Today, school districts throughout the U. S. are reexamining policies and procedures that govern the education of children with special needs, specifically the idea of educating these children in the least restrictive environment. The concept of providing services in the least restrictive environment is not new; it was initiated with the Education for All Handicapped Children Act (P. L. 94–142) in the mid 1970s. What is new is that federal regulations are being interpreted by U. S. courts to require schools to include special education children (the majority of whom are classified LD) in regular education classroom settings for all or a substantial part of the day. Inclusion, or inclusive education, generally refers to the selective placement of children with disabilities in general education classes (Rogers, 1993).

The inclusion phenomenon has a major impact on this country's regular education and special education programs. Moreover, policies that result from this phenomenon will challenge educators to rethink and redesign instructional programs for children with learning problems. For one thing, regular education teachers have students with special learning needs in their classrooms, and as more and more students are included, teachers will ask for instructional programs to meet the individual needs of these youngsters. In addition, school district administrators will seek programs that are considered inclusive and effective in teaching students with learning problems. Building administrators, with assistance from special educational administrators, will also look for ways to provide high quality professional development programs that prepare general educators to work effectively with children representing a range of abilities and disabilities. Thus, the inclusion revolution raises concerns for special and regular education teachers, administrators, policymakers, and parents. These challenges, however, provide opportunities for educators to work together to determine how to effectively meet the needs of children with learning problems.

The Reading Recovery program for children and professional development programs for teachers provide the needed direction to meet these challenges in three ways. First, the program enables educators to separate first grade low achieving students from children who have more severe learning problems, thus reducing the number of students who will need to be served by special education teachers. Second, the yearlong professional development program provides teachers with opportunities to understand how children think and learn by observing, recording, and analyzing students' reading and writing behaviors. Based on this information, teachers learn how to tailor and adjust their instructional practice to meet the individual's learning gains. Third, effective Reading Recovery teachers continue to develop more complex understandings of the learning and teaching process and refine their skills while interacting with the most difficult to teach students (Lyons, Pinnell, & DeFord, 1993). Thus, the Reading Recovery professional development program not only helps low achieving students learn how to read with the average of the class, but also helps regular education teachers understand and help students with special learning needs who will be placed in their classrooms, and special education teachers better understand how children become literate and their role in assisting the process.

What will it take to define the concept of learning disability, identify the truly learning disabled, and determine what kind of intervention is most effective in helping low achieving students learn? Reading Recovery program evaluation data have provided some valuable insights. The issues discussed in this article represent a part of the picture. If used in conjunction with approaches that address the needs of students with more severe learning needs, Reading Recovery can represent a real chance to make a difference in the lives of young children who are having learning difficulties. The Reading Recovery program presents the opportunity for the merger of special education and general education programs and policies for teachers and children, and perhaps the funding sources of each.

References

Adelman, H. S. (1992). LD: The next 24 years. *Journal of Learning Disabilities, 25*, 17-22.

Allington, R. L., & McGill-Franzen, A. (1989). School response to reading failure: Instruction for Chapter 1 and special education students in grades two, four and six. *Elementary School Journal, 89*, 529-542.

Allington, R. L., & Walmsley, S. A. (in press). *No quick fix: Redesigning literacy programs in America's elementary schools*. New York: Teachers College Press.

Algozzine, B., & Ysseldyke, J. E. (1986). The future of the LD field: Screening and diagnosis. *Journal of Learning Disabilities, 19*, 394-398.

Aram, D. M., Morris, R. M., & Hall, N. E. (1992). The validity of discrepancy criteria for identifying children with developmental language disorders. *Journal of Learning Disabilities, 25*, 449-554.

Clay, M. M. (1985). *The early detection of reading difficulties.* Auckland, NZ: Heinemann.

Clay, M. M. (1987). Learning to be learning disabled. *New Zealand Journal of Educational Studies, 22*, 155-173.

Clay, M. M. (1990). The Reading Recovery programs, 1984-88: Coverage, outcomes and Education Board district figures. *New Zealand Journal of Educational Studies, 25*, 61-70.

Clay, M. M. (1991). *Becoming literate: The construction of inner control.* Portsmouth, NH: Heinemann.

Clay, M. M. (1993). *An observation survey of early literacy achievement.* Portsmouth, NH: Heinemann.

Fletcher, J. M. (1992). The validity of distinguishing children with language and learning disabilities according to discrepancies with IQ: Introduction to the special series. *Journal of Learning Disabilities, 25*, 546-548.

Gartner, A., & Lipsky, D. (1987). Beyond special education: Toward a quality system for all students. *Harvard Educational Review, 57*, 368-395.

Heath, S. B. (1983). *Ways with words: Language, life and work in communities and classrooms.* New York: Cambridge University Press.

Lyons, C. (1989). Reading recovery: A preventative for mislabeling young "at-risk" learners. *Urban Education, 24*, 125-139.

Lyons, C. A., & Beaver, J. (in press). Reducing retention and learning disability placement through Reading Recovery: An educationally sound, cost-effective choice. In R. L. Allington & S. A. Walmsley (Eds.), *No quick fix: Redesigning literacy programs in America's elementary schools.* New York: Teachers College Press.

Lyons, C. A., Pinnell, G. S., & DeFord, D. E. (1993). *Partners in learning: Teachers and children in Reading Recovery.* New York: Teachers College Press.

McGill-Franzen, A., & Allington, R. (1991). Every child's right: Literacy. *The Reading Teacher, 45*, 86-90.

Moats, L. C., & Lyon, G. R. (1993). Learning disabilities in the United States: Advocacy, science, and the future of the field. *Journal of Learning Disabilities, 26*, 282-294.

New Zealand Department of Education. (1988). *Tomorrow's schools.* Wellington: Government Printer.

Ohio Department of Education. (1983). *Ohio guidelines for the identification of children with specific learning disabilities.* Columbus: State Department of Education.

Pinnell, G. S., Lyons, C. A., DeFord, D. E., Bryk, A. S., & Seltzer, M. (1944). Comparing instructional models for the literacy education of high risk first graders. *Reading Research Quarterly, 29*, 1-42.

Rispens, J., Van Yperen, T., & van Dujin, G. A. (1991). The irrelevance of IQ to the definition of learning disabilities: Some empirical evidence. *Journal of Learning Disabilities, 24*, 434-438.

Rogers, J. (1993). The inclusion revolution. *Phi Delta Kappa Research Bulletin, 11*, 1-6.

Schmidt, D. B. (1993). *The effect of Reading Recovery on special education and Chapter One programs.* Unpublished Master's thesis, Pacific Lutheran University.

Seigel, L. S. (1988). Definitional and theoretical issues and research on learning disabilities. *Journal of Learning Disabilities, 21*, 264-266.

Seigel, L. S. (1989). IQ is irrelevant to the definition of learning disabilities. *Journal of Learning Disabilities, 22*, 469-478.

Seigel, L. S. (1992). An evaluation of the discrepancy definition of dyslexia. *Journal of Learning Disabilities, 25*, 618-629.

Singer, J. D., & Butler, J. A. (1987). The Education for All Handicapped Children Act: Schools as agents of social reform. *Harvard Educational Review, 57*, 125-182.

Slavin, R. E., & Madden, N. A. (1989). What works for students at risk: A research synthesis. *Educational Leadership, 67*, 4-13.

Stanovich, K. E. (1991). Discrepancy definitions of reading disability: Has intelligence led us astray? *Reading Research Quarterly, 26*, 7-29.

Taylor, D. (1991). *Learning denied.* Portsmouth, NH: Heinemann.

U. S. Department of Education. (1990). *U. S. Office of Special Education and Rehabilitative Service, Twelfth annual report to Congress on the implementation of the Education of the Handicapped Act,* Table AA20, pp. A33-34. Washington, DC: Author.

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READING RECOVERY: THE WIDER IMPLICATIONS OF AN EDUCATIONAL INNOVATION

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Preventing Literacy Failure

MOST EDUCATORS WOULD WANT TO BE ABLE TO DEAL EFFECTIVELY WITH literacy problems in their schools. *Reading Recovery* is an early intervention program designed to reduce dramatically the number of children with reading and writing difficulties that persist throughout their schooling. This program is of particular interest, because it seems to achieve similar results in very different education systems and with very different groups of children. This leads to the question, "What features permit this to happen?"

Reading Recovery addresses a problem of concern to most Western education systems. It selects young children who have the lowest achievements in literacy learning (reading and writing) and tries to bring them to average levels of performance for their classroom. It teaches them how to learn from their own efforts to read and write when they are no longer in the program. With individual, daily instruction children can enter the program as non-readers and be working with the average group in their classroom in 12 to 20 weeks. It is a narrowly targeted program aimed at children who have already had opportunities to learn in a good classroom program for about a year, but have not engaged in literacy learning. They are usually about six years of age. (An earlier version of this paper appeared in the *New Zealand journal of educational studies* under the title "Implementing Reading Recovery: systemic adaptations to an educational innovation" vol. 22, 1, 1987.)

The program is designed as an intervention in an education system and, despite the fact that the instruction is individual, it has the potential to be cost-effective because at least two-thirds of those who enter the program can be returned to average levels of performance in all five countries where it operates. Another 25 percent can succeed in a well-resourced, high drive, highly efficient program. If an education system can clear 90 percent of the poorest performers from the classrooms, the system is then freed to devote special resources to the very small residual group with persistent reading or writing difficulties.* We await the outcome of several years of operation before hazarding a guess at what levels of long-term remedial help will be needed (i. e., those for whom Reading Recovery is insufficient special assistance) but on the early returns these figures are very low, less than one percent of the age group (Clay, 1990).

One group of children who might have difficulty reaching average levels of performance are children suitable for special education who could not function independently without further long-term help. Another group are children who are not in school to be taught or who change school often, and who are not with the teacher long enough to get reading and writing processes established. And there are many other reasons for not having made a good start in literacy learning.

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*The rate and amount of progress reported is similar to that achieved in Bloom's one-to-one tutoring programs which have raised performance by two standard deviations of mean achievement scores (Bloom 1983). This has been called the two sigma effect. Reading Recovery is different from those mastery learning studies in that target populations are special education groups—the lowest achieving children in reading and writing by the end of the first year at school.

Reprinted from Watson, A., & Badenhop, A. (Eds.) (1992). *Prevention of reading failure.* London: Ashton Scholastic, and with permission of the author.

Reading Recovery is more than a particular theory or analysis of what is needed to help children who have difficulty learning. To work effectively Reading Recovery must achieve change along four dimensions:

- child behaviour change achieved by teaching
- behavioural change on the part of teachers; organizational changes in schools achieved by teachers and administrators
- changes in funding and other system variables by controlling authorities

Designed as a prevention strategy to be adopted by an education system, this early intervention calls for an education system to change on several levels (see Section 3).

1. *Learners have Difficulties for Different Reasons*

Beginning with the individual child, what features of this program at this level allow it to accommodate the needs of very different individuals in diverse educational settings? These may be found in several basic assumptions.

- It is assumed that some children in every educational setting will find first steps into literacy learning confusing or difficult. I know of no program of instruction designed for the first years of school that does not have a few children who find beginning reading and writing extremely difficult.

Preschoolers who have been learning from their home and community experiences enter a more formal environment when they go to school, for it is a place with purposes, aims and philosophies about learning. Children must make a transition into this different environment, and they have to work out how to apply what they already know to what they are now being invited to do. Part of the transition is learning how to translate one's previous competencies into ways of dealing with novel learning tasks (Clay 1991). Some children make quick transitions and others take most of their first year at school, but most children can learn in classrooms which are responsive to their individuality. By the end of the first year at school even teachers in quality instruction programs are able to identify a few children who are not making a translation of their competencies into something that will work in the classroom program. (However, Reading Recovery has valid and reliable assessment instruments which assist in the selection of children.)

- It is assumed that once we begin to teach children we create differences between them in rates of progress. This applies in all settings.

Some children begin to lag behind their classmates in the new learning. Educators have explained this by pointing to individual differences—linguistic, cultural, intellectual, emotional, organic or psychological—labels which place children into categories which are supposed to "explain" why we find them hard to teach. Over time educators have paid more attention to the reliability of their categories than to devising ways to have such children learn by some alternative means. The Reading Recovery approach is to make the general assumption that there are ways in which children, already falling behind their classmates, can be given supplementary help which enables them to make a satisfactory translation of their current competencies into school-type literacy learning.

- It is assumed that some children will have difficulty with literacy learning irrespective of how good classroom instruction becomes.

Many educators strive to change the classroom programs so that fewer children need individual help, and this is good. But reading and writing are very complex sets of learning and there are many debates and many competing theories about what is being learnt and how that learning can best be facilitated. Authorities place different emphases on different aspects of this complex learning, giving pride of place in their programs to (a) language, (b) letter-sound relationships, (c) skills or (d) meaning and understanding. Such differences are unlikely to disappear and general agreement is unlikely to be reached.

Reading Recovery has no comment to make on these different approaches to classroom instruction. Irrespective of how classroom instruction is designed and delivered, the majority of children, some 80 percent or more, survive the various and different programs quite well and only children who find it hard to learn are disadvantaged by the debates. The teacher's guide to the Reading Recovery program carries this warning.

A note of caution must be sounded. Most (80 to 90 percent) children do NOT require these detailed, meticulous and special Reading Recovery procedures or any modification of them. They will learn more pleasurably without them. For a few children, individual and consistent tutoring with these special procedures introduced after one year of instruction may well prevent the development of a pattern of reading failure (Clay, 1985).

By the end of the first year at school, teachers are faced with a few children who can write no more than three words or hardly read the first level of introductory books, and schools have a responsibility to offer them "something extra." That is where the Reading Recovery program comes in. It is designed to give children who have not made a successful transition into literacy learning after their first year at school a second chance to become successful readers and writers. Results show that an education system can bring success in literacy learning to many children who previously remained low achievers throughout their schooling. This can happen in a relatively short period of time and as a back-up to a high quality classroom program. Reading Recovery is an appropriate supplement for even a high quality classroom program. It prepares hard-to-teach children to become active participants in that program.

- Reading Recovery does not exclude any child for any reason—intelligence, ethnic membership, language achievements, school history, physical handicaps or learning disabilities. It therefore deals with the social inequalities problem.

Specialists are not needed for selecting children for the program. The Reading Recovery teachers, trained in systematic observations of reading and writing behaviours, choose potential Reading Recovery children in consultation with other school staff. The children are simply the lowest achievers in their particular schools.

- This program assumes that, in a complex set of achievements like learning to read and write, difficulties will arise in infinite variety and combinations: the children to be helped will be failing for many different reasons—such as highs and lows in various related competencies, variations in previous opportunities to learn, illness and absences or confusions undetected.

As a consequence, Reading Recovery sees its task as working individually from the knowledge base and strengths of one particular child, moving through a particular path of learning for that particular child and bringing different children by different routes to similar outcomes as active participants in their own classroom program.

- Reading Recovery selection criteria are relative rather than absolute. In each school the lowest achievers in the age-group are given the first opportunities to enter the program, and no child in an ordinary classroom is excluded for any reason. The children given help are low achievers relative to the population in their own school.

These basic assumptions lay a foundation which permits the program to migrate across education systems. However, such features of the instruction are not enough to ensure the survival of the program in an education system. Attention must be given to the training of professionals and to external factors in the education system.

2. *Professional Development: A Hierarchy of Expertise*

Dalin argued that it is important to develop new skills at all levels of the system to maintain an innovation. There must be access to opportunities for professionals to learn the new behaviours called for and to learn about the conceptual and operating models of the changed behaviours. In particular, one has to work very hard to change established ways of thinking about how to deliver new kinds of teacher expertise to children who are hard to teach. From the teachers who teach the children, to the principals or head teachers, psychologists, and up to the top-level administrators, changes in knowledge, skills and behaviours must occur and be sustained over time. Problems of educational change are often equated with problems of getting teachers to change, summed up in the cry "If only we could find and train the teachers to . . ."

when in fact what is missing is a pedagogical plan to support the innovation so that the system learns what is required and how to get it into place (Dalin, 1978).

Training the Teachers

Teacher involvement. Dalin concluded that research and development models often use a hierarchical decision-making model with the researcher at the top and excluding the class teacher, and he recommended that one should ask: "To what extent were the teachers taken into account in the problem definition, the decision-making, (and) the development and implementation of the strategy? At the end of a long innovation history, was teacher participation broadly based or only in the innovating schools?"

- A problem was defined by New Zealand teachers. Using systematic observation techniques, they could identify children who were not making progress in reading and writing after one year at school and wanted to provide better instruction for them. They asked for further research.
- In the development phase, competent teachers taught children with problems and their teaching procedures were studied in detail (Clay & Watson, 1982). Some were retained because they worked and seemed to lead to accelerated progress; many were discarded because they seemed to slow up the child's progress. This meant that the teaching procedures used in the program were never far removed from the grasp of classroom teachers who were to be trained as Reading Recovery teachers.
- In the field trials a new teacher from each of the five schools volunteered for the job. They edited the manual of procedures in that they told us, and we recorded, every time they found the text unclear or insufficiently precise. The manual was rewritten in its published form with the aid of those teachers' complaints about ambiguity and clarity (Clay, 1979, 1985), and I have continued to revise it with the advice of teacher users.

At the end of the field trials, the New Zealand teachers and the schools owned the program in every sense. Principals were speaking for it. The teachers' union was beginning to ask for information.

- Expansion of the program has always proceeded on the basis of self-selection by schools and compulsory attendance of a staff team of three at the orientation meeting. The principle of teachers volunteering for training has been applied in most national settings. A system may support and encourage, or require schools to mount such a program; and the reactions across the education system will usually be negative in the latter case.

Teachers can be Involved at all Stages of the Development and Expansion of the Program.

Teacher change. Teachers in Reading Recovery are trained to be responsive to the learner and to make effective decisions, moment by moment, on the evidence of the child's responses during the individual teaching sessions. They decide where to direct the child's attention next to get the biggest learning gain from the next small step. They design a lesson for a particular child at a particular point in their progress, for there can be no package of teaching materials when one is teaching to a particular child's strengths. Such teaching is very different from that commonly found in classroom practice. How can drastic changes in teacher behaviours come about?

Goodlad (1977) recommended a network of peers to build a necessary support system for information-sharing and problem-solving. The experiences of trusted colleagues matter in the adoption of new practices. The model of training used in the in-service sessions worked well in all countries. It generated high interest, effort and dedication in the face of difficulties, and an air of curiosity and surprise that something different was occurring.

In a typical Reading Recovery training course, about 12 teachers begin training on the assessment of observations of reading and writing behaviours. These procedures are used for initial assessments, for records of behaviour change in day-to-day lessons, and for outcome assessments. Observational procedures overcome some limitations of standardised tests for monitoring progress because they can be used to record (a) whether, (b) when and (c) in what ways, behaviour is changing. Teachers observe exactly what children are doing and make these observations more explicit by analysing running records of text reading daily. Teachers write a diagnostic summary report of the useful responses that the child controls before they begin teaching. This careful analysis leads the teacher to design particular lessons for a particular child. Teachers discuss perplexing points or alternative interpretations at in-service sessions and they submit their analyses for review by tutors. Before they begin teaching children, teachers write predictions of what changes they would expect to see in children's reading and writing as they improve. This helps them to specify particular goals for each child and to grapple with some of the conceptual issues.

To minimise feelings of insecurity that teachers might initially feel about changing their teaching patterns, they are invited to teach a minimum of four children daily according to their best judgment. They are reminded that they are experienced teachers and are urged to draw on their experiences of working with children. It is considered economical to move teachers from the full strength of their present competencies rather than to demand at the outset new behaviours which might cause confusion and disrupt established and efficient responses (Gaffney & Anderson, 1991). Teachers in New Zealand and Australia did not have a competing model of reading instruction in their classrooms; teachers in Columbus, Ohio, using the basal series did.

New concepts and procedures gradually become part of the teachers' repertoire. As they learn to use the new procedures each knows that they are a learner and so are their peers. If the demonstration child of the day acts up and makes the teacher's task harder, the audience of peers is the most sympathetic a teacher could have. By the end of the training year teachers have acquired new theories of how their children performed and how they should respond. They are then able to question, challenge, discuss, work out a course of action and explain their decisions in ways they could all understand, because these new ideas are shared and explicit even though the children continually challenge their teaching and their understanding. In each country where the program has developed there has been a slow, steady shift in teachers' ideas and practices and a gradual increase in willingness to work with more challenging children.

The Columbus research report said: "Initially skeptical that any program could substantially change the shape of school progress for such low achieving children, teachers were surprised to see these failing readers make faster than average progress. Columbus Reading Recovery teachers grew professionally and significantly changed their expectations for children and their belief in the importance of their role as teachers" (Huck, et al., 1985).

While training is delivered during two-hour in-service sessions at one or two weekly intervals over the period of a year, teachers are working with children and carrying out other teaching duties throughout the period they are in training.

In many schools staff have supported a school organisation which releases a teacher to work with children in this way, because the program was seen as one designed to reduce the number of reading problems in the age group and eventually in the school as a whole.

The quality of the Reading Recovery teachers' instruction following the training year has also received attention. Results from many different sites lead to the conclusion that, to maintain high discontinuing rates, there is room for little variation from the functionally effective procedures studied to date. Twice every term teachers return to an in-service session conducted by the Reading Recovery tutor. They discuss two demonstration lessons by peers, and their own programs. It is important they continue to ask "Why" questions about children's behaviours, maintain a high level of responsiveness to individual children, question the effectiveness of their own practices, get help from peers on hard-to-teach pupils and have the opportunity to weigh up how new knowledge in the field relates to their daily practice.

Reading Recovery Tutors (or, in the USA, Teacher Leaders)

Tutors in Reading Recovery are key people. They have a complex role which requires a wide range of theoretical and practical skills obtained in a full year of training. They are what Goodlad (1977) calls "a redirecting system."

The systems, of which the school is a part, exercise enormous constraints which are essentially conservative and which serve to discourage change and innovation. These systems are not only the formal political ones of state and local organisation for education, they are also the informal ones, exerting subtle pressure by way of implicit and explicit expectations of schooling . . . if change is to occur at anything like a more rapid rate than is characteristic of the whole, the existence or creation of a redirecting system of considerable salience may be critical.

- As part of a year's full-time training, Reading Recovery tutors train as Reading Recovery teachers and work through the experiences of a trainee group as group members. Only by participating in the operation of Reading Recovery over a whole year can tutors become aware of the shifts in teachers' understandings, their questioning and their in-service needs as their skills increase.
- Reading Recovery tutors are required to test practice against theory. They need an academic understanding of the theoretical concepts upon which the program is based and yet they require a flexibility to consider new concepts and practices. They must have a sensitive awareness of the organisational, professional and child development issues associated with the innovations in the program and extensive teaching experience in the first two years of school. They have to continually analyse what they are doing in order to weigh up in theoretical terms any proposals to change the program.
- They need to collaborate with teachers whose work they observe and discuss. They must be skillful in helping teachers to grow and develop and in working supportively with them, even though it is their role to also criticise and evaluate the teachers' performances.
- Trainee tutors develop a thorough knowledge of the whole operation of the program in an education system and of the development and history of the project. The organisation and administration of the teacher's in-service course, from the introductory talk to the research evaluation at the end of the year, are studied in detail by tutors during their training. Critical appraisal of the program's strengths and problem spots and of competing explanations for its success provide them with practice in communicating with other professionals or with the public in print and in discussions.
- Trainee tutors observe trained tutors, on visits to teachers in their schools, who are talking over teaching techniques, answering questions, observing the teacher at work, and sometimes working with a child in an exploratory way, at a teacher's invitation. Late in training, trainee tutors make similar visits to teachers.

A yearlong training began at the University of Auckland for the Department of Education, and the training role subsequently passed to the Auckland College of Education. Tutors for Australia have taken this course. The training for the USA, which began at Ohio State University, is now available at some 41 sites in different states. The selection of people to train as tutors is important. Tutors need to have been effective classroom teachers, and they must become competent Reading Recovery teachers. They need to be able to help teachers to change while supporting them through such change. Concurrent with their in-service courses in New Zealand and the USA, tutors have taken university courses about theoretical issues and recent research on reading and writing processes and issues in literacy difficulties. When such courses are closely related to theories which support and challenge this particular program, they prepare the tutors to respond to analyses and evaluations of competing and controversial ideas in related fields such as prevention, early intervention, individual teaching, clinical approaches and evaluations of programs.

The involvement of a tertiary institution with a research capability is an important factor supporting the tutor course. On the one hand it was important for the survival of the original program that the academic development team relinquish ownership of it and their hold on it.

In New Zealand, the education system has assumed responsibility for training the teachers and the tutors, except for the contribution from university coursework.

However, in other settings, ways have been found for tertiary institutions to play an important role in sustaining quality control over the professional development and implementation aspects of Reading Recovery, to prevent massive change to the program so that it no longer fulfills its promise. In the USA, a federal agency, the National Diffusion Network, selected the program as an exemplary educational program and provided a small amount of funding to support well-controlled dissemination of the program through training and monitoring grants. It was also necessary to bring the program in the USA under trademark law to protect it from creative and uncreative substitute programs which appeared. This move has been misunderstood by some, who failed to see how destructive unlimited variants and poor training could be to a program which had demonstrated that children who were hard-to-teach could succeed under a special set of conditions.

Collectively, Reading Recovery tutors exemplify Goodlad's (1977) "redirecting system" because they teach children, train teachers, educate the local educators, negotiate the implementation of the program, act as advocates for whatever cannot be compromised in the interests of effective results, and talk to the public and the media, correcting misconceptions. A redirecting system, according to Goodlad, must be insistent, persistent, and sustained over continued crises. Without a redirecting system for an innovation, the established or traditional system may gradually take the innovation and transform it back to old practices.

Who Trains the Tutors? Trainers of Tutors

In Reading Recovery there are cycles of change in children, a year's cycle of change in teachers, and a year's cycle of different changes in the tutors-in-training across four major areas of learning. The trainer of tutors must have full knowledge of what it means to bring about all these cycles of change on the ground in practice, but in ways that are consistent with the academic theories which support the program. A trainer must bring these several areas of expertise together in an ongoing way as the program is problem-solved into an education setting.

It is a feature of the Reading Recovery training that teachers do not graduate to be tutors, and tutors do not become trainers of tutors. This is because at each successive level of training the roles of the professionals, and the theories they need to use, are different. A teacher can do an excellent job without the theoretical understanding that a tutor must have of the reading and writing processes, so that preferably that tutor can engage in the debates at the cutting edge of current knowledge. A tutor may carry out an excellent local inservice program and support a local implementation of quality, without needing to know how to train others to carry out this role.

So where do the trainers of tutors who must prepare tutors for many roles, come from? These professionals typically come from or become attached to tertiary institutions as members of staff. The first Reading Recovery trainers were trained at Ohio State University by the New Zealand team in 1984-85, and two further faculty members were subsequently trained to launch the statewide program in 1985-86. In 1989-90 both the Auckland College of Education in New Zealand and Ohio State University began the preparation of tertiary educators for training tutors or teacher leaders. The program is directed by three trainer-coordinators in New Zealand within a college of education, and by trainers of teacher-leaders at 17 sites in the USA, many of which have an administrator as site coordinator. Trainers complete the requirements of (a) becoming a successful teacher of Reading Recovery children and (b) becoming a tutor. They must stay in close contact with how teachers are learning to deliver the program and they must be able to ensure that both teachers and tutors gain a working knowledge of how to act in ways that are consistent with a theory of the task and a theory of learning (Wood, Brunner, & Ross, 1976). A trainer needs to be able to think integratively about theory, bringing diverse areas of current theoretical and practical knowledge together into working relationships but, in addition, trainers must be successful in educating other professional educators to do this.

Trainers also help to develop and coordinate a Reading Recovery program in their own education system. They need to advise administrators on how the quality of the program can be sustained over time, achieving high rates of discontinuing and so maintaining the cost-effectiveness of the intervention. They need to know the range of research that has been reported, and to advise administrators on research needed to monitor the implementation.

When trainers are being prepared to work in new education systems which are taking on the program for the first time, this is particularly challenging, because the differences in education cultures and practices call for problem-solving the theory of the early intervention into the beliefs, practices and academic literature of a new education system.

At this time, trainers of tutors able to start up programs in new education systems are trained only at two sites—Auckland College of Education and Ohio State University. To date the question of expanding such training has not a risen. (When it does there is another problem to solve—who trains the trainers of trainers?)

3. *Systemic Factors Influence the Implementation*

Educational programs are designed for particular settings, historical times, and cultures. They are not expected to transplant readily to other educational systems. If Reading Recovery was designed for implementation in New Zealand and had many features that were consistent with instruction in that country, how was it to survive the migration and achieve very similar results in very different settings? An analysis of the systemic factors which probably supported the transfer of the Reading Recovery program to other education systems in Australia, the USA, Canada, and England is of interest.

Organised systems maintain their integrity through a strategic balance of vital processes. They are not free to learn, adapt, or change in any way. They can only be modified in some way that is consistent with that vital strategic balance (White, 1976, 1979). It may be hard to achieve a policy change, but it is harder to achieve and sustain a change to the operating system itself. One can approach both child learning and education system learning in this way. The child who is to be taught reading already has a functioning spoken language system which operates productively, and concepts, however primitive, about literacy. This preexisting organisation interacts with the reading instruction just as the preexisting organisation in the education system interacts with the ideal model of the innovative program. This is the perspective of my own field of study, developmental psychology. So my personal orientation in developing Reading Recovery was to take account of the complex interdependence among parts of the system. I knew that older children were hard to teach as failing readers and that their return to average levels of performance was rarely achieved. A new attack on this problem was needed, and it called for more than an analysis of the counter forces that could be operating when a new program is tried. In an effective intervention the interdependence of variables demands a systemic plan, for an innovation cannot move into an education system merely on the merits of what it can do for children. According to Dalin, program developers must see change as a problem of institutional linkage in which there is likely to be conflict about issues which will affect the survival of new programs.

The stakeholders. To illustrate this, when the first New Zealand report was published it was pointed out how the new program could interact with the phenomenon of falling rolls in most schools, which was about to threaten the job security of some teachers. Reaction to Reading Recovery varied according to the vested interests of the stakeholders.

- At that time politicians were seeing rolls as a way of saving money to spend outside education.
- The Department of Education wanted to use the money saved to provide extra teachers to improve the quality of education, and Reading Recovery was one way of achieving this.
- The teachers' union publicly advocated the Reading Recovery program, but called insistently for the creation of new and extra teaching positions.

- School principals suspected that the one-to-one program would be uneconomic, but when the first children left the program they began to work to keep it in their schools.
- Reading Recovery teachers-in-training were excited with the progress of the children but found that they had difficulty convincing skeptical colleagues. They learnt to become more effective advocates.

In 1984 a new government, acting upon the premise that a child's progress through school depends largely on what degree of success they experience in the critical early years, created over 800 new teaching positions in preschool and junior (infants) classes, 236 of them in Reading Recovery.

Acceptable adaptations. In Central Victoria and in Columbus, Ohio, in Canada and in England, different systemic variables called for adaptations to the program's delivery. In most places, in the first year of operation, a monitoring research project has been required by administrators to describe how much change was being achieved in the children's learning. Such studies usually reported the adaptations made to suit practical factors of setting, the environment and the system.

Some adaptations can be preplanned.

- Prior to innovation in a new country the local reading program was studied and the alignment of Reading Recovery instruction with this was hypothesised.
- Assessment procedures of both schemes were compared and scoring at various stages of early reading progress predicted. Thus, if the beginning instruction program in the system's classroom stressed learning to read words in isolation, then higher scores could be expected on a word test of reading than in a system that stressed learning to read text in storybooks.

Or, children taught in the classroom to write using phonemic segmentation might score higher on a word writing test than on a word reading test. Such differences would be predicted from the teaching emphases rather than children's ability to learn. We could expect such initial bias in Reading Recovery children's control over a range of skills to gradually widen and fill out to average performance across all assessment instruments.

- Word tests were designed for the assessment of change in word reading, based on frequency of use in the local reading books.
- Each country worked out how to make the transition from Reading Recovery instruction to classroom programs.
- Development teams always faced practical impediments to the everyday running of the program—e. g., architectural problems with one-way screens, materials problems like the difficulty of finding extremely easy storybooks with a plot and a simple text, or unlined exercise book for writing stories.
- Time of entry to school and age of entry to the program were factors which had to be adjusted to the local education system. We were unlikely to duplicate the New Zealand system of school entry, where children begin formal schooling on their fifth birthday.

Incentive structures. In Columbus, teachers had to train out of school hours to receive university credit. In New Zealand and Australia they trained in school time while the system paid for substitute teachers, and they received no credit towards an advanced qualification.

The security of individual teachers and their incentive structures must be considered in relation to any innovation. In New Zealand the first teachers (in the field trials) were released for full-time Reading Recovery work and they reported that they felt the loss of their classes and the reinforcement received from successful pupils in those classes. The second effect was that the teacher's colleagues thought they had been given a soft option, having to teach only one child at a time: teachers were sometimes treated with less respect than they deserved. Since the field trial year most New Zealand teachers have retained their classroom contact and have worked only part-time at Reading Recovery and these problems have not arisen in subsequent years.

Competing programs. In some education systems Reading Recovery becomes an optional alternative for supplementing the classroom program. In the USA there were existing programs offered for social (Chapter 1) or psychological (learning disability) reasons. Such existing programs have the potential to threaten, or be threatened by, another new program. In Columbus, Ohio, in the first year of the experimental program, role changes were successfully negotiated for class teachers and Chapter 1 teachers. In the following year, as the Reading Recovery program expanded in the same schools, a teacher aid program for Year 1 competed for candidates. This was resolved by a monitoring study looking at how well each of the programs served children, and whether both were necessary.

In Summary

Because of such systemic relationships an innovation likely to survive will be one which is cohesive both internally (in terms of theory, training, program design, evaluation) and with the host system (i. e., it must be workable, contributing, cost-effective, and a winner with the stakeholders). The implications of a new program at the level of an education system must be clear. The goals and benefits must be stated—in this case to reduce the number of children unable to work at average levels in their classroom and to do this for a high percentage of such children and, as a result of this process, to identify early those who will need continuing help. There are both human and economic values in this saving of time, effort and resources which appeal to different stakeholders.

4. *Expansion of the Program across Education Systems*

Early reports describe how Reading Recovery was developed in New Zealand, moved to field trials in 1978, and to national implementation in 1983 (Clay, 1979, 1982, 1985).

In 1984 two international moves occurred. A region of Central Victoria[1] introduced the program into 17 schools, guided by perceptive administrators in Catholic and state education, a local committee of educators, and two tutors trained in New Zealand.[2] As features of Victoria's education system differed markedly from the New Zealand system, this would really test the flexibility of the Reading Recovery program at the system level. Two local research projects were contracted to monitor (a) child progress and (b) reactions to the program.

Canberra introduced the program in 1986, and over a number of years trained tutors and teachers developed the program across the education system. There were small developments at other Australian sites, and in 1988 Catholic and state educators in New South Wales began to build up the infrastructure of teacher training.

Developments in the USA began with a collaborative venture in Columbus, Ohio mounted by Ohio State University, two research foundations,[3] and Columbus City Schools in 1984. Teacher training, tutor training, and trainer-of-tutors' training began in 1984-1985, using staff from New Zealand. Following independent appraisal of the first year's program by the State Department of Education, the Ohio General Assembly voted funding for statewide developments in 1985. By the autumn of 1990 the program was operating in 268 school districts in the state of Ohio. Since 1989 more than 40 new states have sent district personnel to an established training scheme. It is reported that 86 percent of the 13000 at-risk Year 1 readers receiving a full program in the USA have been able to read at average levels in their Year 1 classrooms (Dunkeld, 1991).

Two provinces in Canada have programs run by trained tutors, and plans to establish a Canadian training course for tutors are being made. In England, Surrey mounted the first program with tutors trained in New Zealand, and developments in the London area followed from that.

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[1] The Lodden Campaspe/Maliee region.

[2] The expansion of the project to Australia, the USA and the UK was supported by the New Zealand Department of Education by providing opportunities for tutors from Australia to train in New Zealand and for national coordinators of the program in New Zealand and tutors to work for short periods in those countries.

[3] The Martha Jennings Foundation and the Columbus Foundation.

Research reports of the first year trials in New Zealand (Clay, 1985), Central Victoria (Wheeler, 1986; Smith, 1986), in Columbus, Ohio (Huck, Pinnell, Holland, Peterson, Sheldon, Steel, & Woolsey 1985; Huck & Pinnell, 1983), and in Surrey (Wright & Prance, 1991) are available. There is a book of readings (DeFord, Lyons, & Pinnell, 1991) and many articles on what has happened in different countries. Dyer (1992), a school principal, published an interesting report on cost effectiveness. The current status of the large development in the USA is clearly reported in the National Diffusion Executive Summary, 1984-1991.

5. *Answering the Criticisms*

From Special Educators

Some of the current debates in special education have been applied to Reading Recovery. They involve concerns with withdrawal programs, labelling theory, and problems of differential diagnosis. Carrier (1984) analysed recent reforms in special education in the USA and England and concluded that they would be likely to increase the number of children in special education and strengthen the processes of differentiation and allocation of children to such services. He described differentiation as (a) the identification of children as being of different sorts, which provides educators with a sense of the child's capabilities and (b) the allocation of children to practical, pedagogic and curricular consequences. He distinguished between minor and major allocation in this way.

Minor allocation occurs when the child remains in the main classroom and receives only a slightly different curriculum or pedagogy, while major allocation occurs when the child is put in a special place away from the regular classroom and receives a very different curriculum or pedagogy.

How does Reading Recovery overcome these problems? Children are differentiated on the basis of their learning to date about the end of the first year at school. It is assumed that they have not been able to learn from the instruction provided so far and could do better if taught individually towards that same program. Expectations (backed by research trials in three countries) are optimistic; children will escape "minor allocation," to use Carrier's term, in the future because they are expected to move out of the slow learner group. Temporary minor allocation of children who remain in their classroom program, and have supplementary attention, reduces the differentiation and discontinues the allocation. The outside limit has been set to be within six months for each child in this program.

Bart (1984) makes several further points on differentiation of special education children that can be addressed by the Reading Recovery program. These are contrasted in Figure 1.1.

Reading Recovery places a short time limit on "allocation," is planned by the staff of the school, designed by teachers, has an initial goal to eject the child from the status of being different and "allocate," as the result of good instruction, presents a learning challenge to the teacher who is trained to achieve this and is not aided by any deliverable packages, as every child's program is different. As a program it meets the different needs of children but is explicitly designed to avoid the five problems of special education identified by Bart.

From Learning Disability Professionals

Reactive analysis of the Reading Recovery program by the learning disability lobby in New Zealand has surfaced in public documents and the press over several years. The criticisms and challenges have changed over time as the program has expanded. Strongest opposition came from outside the school system, seeking government resources for development programs and special provisions based on a learning disability model which had not become a significant aspect of the state education system. A division of interest was somehow arrived at. I claimed that the Reading Recovery program was designed for all children, not excluding anyone and including children of lower intelligence. A specialist diagnosis was not part of the identification process.

Figure 1.1. ***Effects of special education (after Bart, 1984).***

Bart's criticism	Reading Recovery
(1) Calls attention to deviance, perpetuates concepts of disability.	(1) Rapidly reduces differences for many children.
(2) Maintains professional authority and cognitive superiority of specialists.	(2) Diagnosis and referral is between teachers and within the school.
(3) Rationalises an asocial approach to teaching.	(3) Adapts teaching to the individual to achieve acceleration.
(4) Packaged programs replace teacher's program.	(4) Teacher-designed individual lessons replace class group programs and basal packages.
(5) Special education curricula track leads student away from class program and narrows life options.	(5) Works with class curricula in view and returns child to this in 12 to 20 weeks.

Nothing precluded the persistence of the learning disability concept. When the good results of the program across the total population of low achievers became known, the SPELD spokespersons claimed that obviously SPELD children had not been part of the program. They continued to ask for special provisions based on specialist diagnosis predominantly directed by a hypothesis of an aetiology of brain damage. We could assure them that after a maximum of 20 weeks of good individual instruction in Reading Recovery and only 18 months of schooling, children with a need for further individual instruction would be identified and referred on. A contrastive analysis between SPELD and Reading Recovery teaching asking which was most effective, least costly or most favoured would not be appropriate because these are not alternative solutions. I do not consider that the approaches are directed to the same special education population.

SPELD's approach offers a clinical intervention for individuals now and Reading Recovery is a prevention program offering an education system a solution to the incidence of reading problems in the future. Reading Recovery is a planner's solution not a remedial program for the older child with a reading problem today. It is a validity check on this point that administrators and politicians in New Zealand and in the USA have found it easy to understand the goals of the program; they work with a planning perspective.

The program meets the recommendations of Ysseldyke (1985) for improving programs for children with learning disability in that it focused on educability, increased engagement time, quality instruction, and well-prepared teachers. However, in two respects the program differs from his suggestions. First, in strict definitional terms Reading Recovery is not a program of direct instruction because it aims to improve the in-the-head processing initiated by the child in reading and writing activities (on the basis of behavioural evidence) and does not begin with a set curriculum to be delivered "directly" by the teacher. Secondly, Ysseldyke's recommendations undoubtedly hold across a wide age range: this program is directed to young children as a preventive measure to undercut the reading problem. (See also Clay, 1987; Lyons, 1989.)

From Researchers

Questions arose from time to time, many of them raised by educational researchers. It was part of the ongoing problem-solving of the project to seek further information from research if questions were posed for which there was not existing data.

- What is the evidence that children learn? Teachers keep daily records in a form which provides a detailed memory of each child's progress. Research analyses have been conducted retrospectively, using these detailed records.
- Can the results be replicated? Following the field trials, the program was developed over the next two years in 100 Auckland schools. In 1978 the 48 schools were randomly assigned to three groups. Their end-of-year results supported the first year's success. Many teachers in many settings were trained, taught, and got similar results (Clay, 1985). The first research projects in Central Victoria and Ohio confirmed that cross-national replication was possible (Huck, et al., 1985; Wheeler, 1986).
- What follow-up studies have been done? The first-year follow-up study in New Zealand showed the rates of progress were, as predicted, comparable to the untutored children in the same classes for those children who had been discontinued children (Clay, 1985). Were the gains maintained as school work increased in difficulty? Three-year follow-up studies in New Zealand (Clay & Watson, 1982) and Ohio (Pinnell, DeFord, & Lyons, 1988) using standardised tests of reading and writing show mean scores within the average band for age or class.

A study of reading achievement in older children in Victoria (Rowe, 1990) found within its large sample of nearly 5000 students a group of 147 ex-Reading Recovery pupils. While the reading achievement levels of those students who have participated in a Reading Recovery program [sic] were generally lower than those of their non-Reading Recovery-exposed peers, the lower limits of the distributions for achievement measures are higher. These findings suggest that those students who have been identified as readers-at-risk and placed in a Reading Recovery program, have benefited notably from participation. Moreover, in spite of the small numbers involved, the earlier gains made by Reading Recovery students now in Year 5 appear to have been sustained (Rowe, 1990, p. 5).

- Did the program produce differential effects for different ethnic groups? This was tested in New Zealand for Maori, Pacific Island and European children. The achievement was satisfactory for all groups, although some extra attention was recommended for individual children who had shown slower progress at various points before the follow-up study, for it could be argued that life circumstances (absences, and many changes of school) and the quality of teaching programs were clearly related to this slowing of progress. The average achievement of the Maori group was still within the average band for their class level (Clay, 1985).
- Was the program implemented as required? This is an important question for any innovative teaching program (Wolf, 1984). It was checked for the field trial year 1978 from records of pupil lessons with running records of reading text and from writing products (Clay, 1985). The reading aspects of the program followed the required pattern; the writing section was omitted if and when the teacher was short of time. Subsequently, tutors have paid attention to this point. A recent study of this kind was reported from Ohio comparing many variables across five programs, including Reading Recovery (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1991).
- What control group studies have been done?

In many ways the research designs used to evaluate this program have been somewhat unusual, governed more by the type of questions to be answered for the education system than by the tenets of traditional methodologies in educational psychology. What Hatry, Winnie and Fisk (1981) called the Cadillac of evaluation research designs (the controlled randomised experiment) does not answer questions about low scorers accelerating to mean levels as a result of educational treatments (and therefore cannot address the social inequalities issues in education). To answer this questions many studies used children in the same school and class, who did not need the tutoring, as the comparison group. In several Ohio studies a random sample of children in Year 1 classes, chosen from those scoring plus or minus one standard deviation from the state mean, were used as a comparison group.

Two Ohio studies used a randomised control group design (Pinnell, DeFord, & Lyons, 1988; Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1991).

6. *Information for Educators and Administrators*

How did people know (a) that this was an innovation and (b) that it worked effectively? This section discusses how administrators were informed about the Reading Recovery program. Reading Recovery programs accept a continuing need to educate everyone about their purposes, procedures and outcomes, and to have up-to-date information on the program's operation and outcomes available for lay and research enquirers. The sheer complexity of the program, and its surprises or unexpected outcomes, make this education process necessary.

- An attractive feature of the program is the way in which it feeds back information on success to all participants from the beginning. Children take only a few weeks to show that they feel in control of their work tasks; parents report changes in children in the first few weeks. Reading Recovery teachers like to see children making accelerated progress before they feel confident of the outcome, administrators are surprised when the first children are discontinued and able to survive back in their classrooms. Researchers are the last to accept the results, waiting for the follow-up studies and evidence that there is more to the gains than scores on word-reading tests, and waiting for the follow-up studies and evidence that there is more to the outcomes than regression to the mean. In contrast, parents and school committees study the teachers' graphs of child progress and join the supporters early in the program. It has been the enthusiasm of the teachers and the joy of the children at having some control over their own success that has been most surprisingly replicated in each country worked in so far.
- Reading Recovery has a device which created a powerful training setting and also provided a window on change. It is a very large one-way screen. All the in-service courses for teachers use this screen between two rooms. Children working at a table set against the screen wall in one room can be observed by teachers in another room. They discuss the teaching demonstration in detail as it occurred. Visitors can also observe the program in this way. The one-way screen becomes a shop window for the program. At any time it has been possible to arrange for two teaching sessions to show two children at work for 30 minutes each in an intensive lesson. Two children are needed to show that each lesson is different. The teacher training situation is also available for public inspection. Both are impressive to watch. As the child and teacher work, the teachers-in-training comment on the flow of events with tentative hypotheses of why this or that is occurring in the lesson and with questioning and debate about teacher and child behaviours. Anything unclear will be clarified; the tutor calls for this. Educators and administrators have seen these two levels of training proceeding at the same time and can compare what they see with (a) class teaching they have seen, (b) in-service training they have known. (To reduce the number of interruptions to the program such opportunities for observation have been used only for important communication purposes and not merely for the curious.)
- Another source of readable data was available as soon as children were being discontinued from the program. The progress of each child in terms of starting and finishing levels can be related to successful performance on the classroom reading materials. The administrator who supported the first field trials in New Zealand was the first to see such results. He could read progress from a teacher's records of book reading during lessons. Comparing these with the typical progress in classrooms he could see accelerated progress. Because the Reading Recovery teacher routinely plots the progressive rise in text difficulty on graphs each week, principals (head teachers) soon became aware of the rates of progress being made. They surprised us by sharing examples with their staff, their school committees and their supervising inspectors.
- The first research reports usually evaluated the progress of Reading Recovery children against an unusual control group—all other children of the age cohort in the same schools not in the program. This comparison was necessary to show that the lowest performers in the age cohort could be moved from a level where they were in the tail-end of the achievement distribution to levels around average for the age group. The research questions were "Did the Reading Recovery children move at an accelerated rate compared to their classmates?" and

"Did they reach average levels of performance?" One would expect the lowest performers on the tests to be significantly different at first from such a control group and that after successful intervention they would not be significantly different, which was what happened. When graphed, the data were again convincing and lines plotting progress for the treated children changed direction and joined the average progress line about the time the children were discontinued. Progress after that time continued on the same slope as that of the control group. Children who had not been rated by teachers as ready for discontinuing were, as expected, below the discontinued group in mean score. Thus, teachers' predictions about discontinuing on the basis of how children were reading and writing could be seen to have been upheld and the program's goals had been reached. Statistical comparisons supported this (Clay 1985).

Most treatment programs equate groups initially, then apply a treatment and test for significant differences. In order to answer Reading Recovery's main questions, the research design had to be different. It began with groups that were different and applied a treatment to bring the groups to similar positions. Using the age group's performance after the Reading Recovery children had been removed as the control group, set up a stringent test of the program's effectiveness. However, because extremes of a distribution usually move towards the mean on second testing, and this regression to the mean often accounts for most of the gain in studies, this must be checked in such research designs. In fact the gains held up, over and above regression to the mean.

While such designs have validity for administrators, they do not have control for the possibility that the children would have improved as much in their school's existing programs. From the purist's viewpoint of scientifically establishing the relationship of treatment to results, this has been considered but seemed so unlikely that a no-treatment control group has not been tested.

- It is helpful if publications of several types are available to satisfy different readers in the education and political system. Usually the same report will not serve all audiences. The press, television and journalists were always given appropriate written documentation on the program before they conducted their interviews. The short, easy-to-understand statements that were accurate allowed them and us to quickly identify points of confusion. I worked on the principle that we had to reduce misunderstanding by anticipation, planning and good forms of reporting, because once abroad, misinterpretations of a new program take a very long time to clear up. It is true to say that we were conservative and careful over any claims or exposure of the program.
- Meetings, seminars, discussions and new materials have to be prepared as the program expands to new areas. Information has to be available to key people. Seminars were held for professionals interested in education. Invitations to appear on television were diverted to obtain shots of children and teachers at work on the program and to administrators who had come to value it. The questions of politicians were answered, visitors were arranged for in schools or at training sessions. In short, every means was taken to ensure that the messages that became public were clear, true to the strengths and limitations of the program, written at several levels for different audiences coming from a wide spread of professional involvement. A complex program was able to proceed down a clear path, picking off each challenge or counter argument on the way until acceptance of the program was achieved, in two countries, by a vote of funds in a budget. The aim of the communications was not propaganda or advertising, but charity of messages true to the conceptualisation of the program.

If you have a rather creative solution to a problem it breaks with traditional problems and concepts. We forced the distinction of Reading Recovery and remedial reading by the name, but out new name became a popular one for others to rename remedial reading! So it was not all plain sailing. For the present most educators and journalists in New Zealand now accept Reading Recovery as an early intervention program which is quite different from traditional remedial reading programs. Before long there will be another cohort of new journalists who need to be educated all over again.

7. *Survival, Innovation and Dynamic Processes of Change*

How can a program like Reading Recovery prepare itself to change as required (a) to adapt to conditions in other education systems and (b) to take aboard new theoretical insights as they emerge in the literature, so that "black holes" in current rationales for aspects of the program can be filled by new information after it has been tried and tested on the population for which Reading Recovery was designed?

Society. The environment within which the innovation is generated is itself changing. Its success will be affected by the economy, political stability, social expectations, labour market, education's relations to other societal sectors, unions, and the state of technological change and educational development. Financing, decision-making, support structures, size of the system, and the relation of the individual school to the system at large, and the goals of the innovation, are important factors also. Any educational change will be embedded in a network of these factors and any one of the factors may undergo a shift which in turn facilitates or hinders the process of mounting the innovation. As an example, after six years of slow but steady progress, Reading Recovery's development in New Zealand was suddenly faced with accelerated change when a new government was elected. Such societal factors require the innovation to adjust through problem-solving in a continuous pattern of change.

The education system. Because an education system is designed to maintain itself and because it does this by existing laws, regulations and other control mechanisms, taking an innovation aboard involves a change process with problem-solving as each new response to the innovation appears in the system. Advocacy for change can occur as a conflict with what exists and this potential must be recognised. Conflict with existing provisions, regulations, beliefs or professional roles is likely to be continuous in an innovating system so that neither consensus nor conflict is an indicator of success or failure (Dalin, 1978). When an innovation is taken over by another education system from the one in which it originated, it must allow for a problem-solving period while the receiving system makes its adaptations. The art in the change process is that the changes should not distort or diminish its payoff and any changes made should be explicitly referred to theories of what is occurring. Compromise, or unthinking adaptations can readily change the impact of the innovation and reduce its capacity to deliver effective results. During periods of expansion every effort should be made to ensure that the parts of the program retain their cohesion and links with other parts of the program.

The training. When preparing an informed leadership the program always faces challenges from those in training. Four key factors in an implementation of Reading Recovery program stress informed leadership (Dalin, 1978).

- A university-level training program to train tutors and staff who will act as consultants to the educational systems and who can explain the implications of compromises and modifications for the expected outcomes.
- Persons at the highest level of administrative decision-making who understand the instructional features of the program. Expansion should only proceed after such an administrator has been appropriately briefed on-site with a fully operational program.
- The tutors are seen as leaders in their local districts. They have, during their training, been expected to learn to explain the program to those who need to know about it, to answer criticisms, to argue for retention of its basic principles, and to write letters to the local papers or use local media to correct misunderstandings about the program. They have an important leadership role in their own districts, where they train teachers for the local schools over the period of a year, maintain contact with past trainers operating independently in their schools, and are able to deal with the public and professional education about the program at the district level.

- In the Reading Recovery program child learning, teacher learning, system learning and community learning made up effective maintenance systems, with a Reading Recovery tutor as the agent of redirection supported by full comprehension of the program's aims among the educational administrators.

Like the media and newspaper journalists, the educators keep playing musical chairs and changing their responsibilities, so there is a continuing need for Reading Recovery to explain itself to new audiences. This keeps the program on its toes and throws up the possibility of improved conceptualisations, and clearer statements of changing issues.

Programs have disappeared after trials which paid too little attention to training the teachers, educating administrators or achieving cohesion of theoretical and practical training.

The creation of substitutes. Dalin believed that one of the main reasons for innovations becoming rejected was the creation of substitutes. Substitutes arise within a program when attention to detail, explication and the training of teachers have been insufficient to sustain the original advocacies (Wolfson & Timmerman, 1985). Care must be taken to minimise the vague and ambiguous corners of the theory and procedures so that alternative and drastically varied interpretations of how to teach are not made unwittingly.

Substitutes arise when the program is successful, because the teaching looks easy and is copied superficially. Effort, quality control, time and attention may be reduced and there may be tinkering with the components of the program. Only a monitoring of the implementation and an insistence on training as designed can control this.

Substitutes can arise from adaptations of the program to settings that vary in many practical aspects, or from political and economic constraints on an operation of funding. In particular, short-cuts in training have often been offered as a (false) economy for Reading Recovery training.

However, substitutes also arise from extensions to the theory behind the program, from alternative and equally reasonable conceptualisations or from challenging and oppositional theoretical positions.

Control over the creation of substitutes that threaten the Reading Recovery program has been attempted in several ways. The teachers receive a year-long training during which time their understanding of the procedures and the program are tested by their tutors, their peers and themselves against their actual practice while teaching. Local programs in a peer group of schools are organised by highly trained tutors, who train the teachers while at the same time acting as Reading Recovery teachers themselves so as not to lose touch with operations at the workforce. Teachers bring their bright ideas for changes to the tutors, who must be able to relate them up through theory and back to implications for children and/or the program, and they will pressure in discussion for either consistency or change in the program. When would a change be sanctioned? If it did not threaten the acceleration in learning achieved in the program, or the range of reading and writing skills which improve, or the emphasis on independent learning that is related to continued progress. The effectiveness of the change would need to be clearly demonstrated for the designated population of children.

Most of the substitutes offered have either been welcome adaptations for size of school, available personnel, age of entry and other organisational factors, or they have been clearly an unacceptable break with the principle that every child's program is different and takes a different course. Training teachers to devise and deliver that instruction in individual lessons follows from that principle.

Programs have disappeared after trials which paid too little attention to training teachers, educating administrators, or maintaining cohesion between theoretical and practical training.

A conservative model. Is this a conservative model of change? Robinson (1989) claimed that it was. She said it would not allow important questions about the classroom programs serving five- and six-year-old learners to be posed. She was quite correct. Given that there has always been massive innovation in classroom programs across the world such that we are deluged with variety, and that successful interventions known to reduce the incidence of reading difficulties are very rare, a choice had to be made. Reading Recovery continues to develop as a program which takes in children from any kind of prior instruction sequence, and returns children to any classroom program. In order to do that the instruction must bring children to a level of independence in their processing of print (in reading and in writing) such that they can survive back in their classroom with a not-noticing teacher. They need to be pushing the boundaries of their own knowledge during the usual program in their classroom.

I would argue that there is a body of theory which can be used to guide what is done in classrooms and what is done in Reading Recovery, and this is what I have tried to write about as the construction of inner control (Clay 1991). However, the realisation of that theory in classroom practice looks very different from what it is necessary to do with the "hard-to-teach" children in Reading Recovery. I hold firmly to the belief that it is inappropriate to use models of programs and procedures that work well with the hardest-to-teach children as models for what should be done in classrooms for most children who learn easily. One does not get to good classroom practice for all children by studying what is need by the lowest 20 percent.

Theory and responsive teaching. Movement in theory presents most of the dilemmas. Working from a "tool" concept of theory as an aid to thinking about complex interrelationships, and accepting that tentativeness must be a feature of any current formulation, one must allow for the guiding theory of an innovation to change. Given that implementation takes time, however, one must guard against dissipation or destruction of a successful innovation before an adequate test of the original theory within the education system has been made. A period of protectionism is warranted.

Challenges. A strong challenge for the program in its early days was that it was unlikely to be able to help sufficient children. The percentage that can be helped depends (a) on the funding of the program, i. e., what percentage of low achievers is provided for and (b) on the energy and critical theoretical vitality of the application which affects the proportion of children discontinued from the program at average levels. The program has already been shown to be cost-effective when it creates savings on existing programs in some settings, because it does not merely provide for children with special needs but reduces their numbers (Dyer, 1992). As fewer children with severe reading retardation are found in the upper primary school, release of resources should cover costs of the early intervention and the programs offering more specialist teaching to a small number of children unable to graduate from Reading Recovery at independent levels of functioning in the classroom.

There is one particularly strong threat to the Reading Recovery program. Reading Recovery was designed, applied and evaluated for a special population and it uses unusually stringent criteria for success. Pupils from the tail-end of the low achievement distribution were to be moved into the average band of performance or (statistically) a significantly different population was to become not statistically different from the (variable) average group (this is not a comparison with the exact mean but with performance within the average band). As most instructional theory and practice in reading are not directed to this group but to children who succeed in reading, then the bulk of advocacy about reading and writing instruction will come from theorists who are not familiar with the extreme difficulties of this special population of children. A cautious response to claims for changes to the program on the theoretical grounds is this.

The program has been shown in research to work with this population of children and the results have been demonstrated in day-to-day progress on process variables as well as pre and post-program tests (Clay, 1985; Huck, et al., 1985; Wheeler, 1986). A major change in any component of the program should not be made without similar research documentation of its enhancing effects plus any losses incurred, on the same unrestricted special population of children.

Reading Recovery is potentially vulnerable to this challenge. Most concern in an education system is for the quality of education in the system as a whole, and for the philosophies of the society, and of learning which guide it.

In its efforts to guide the flotilla of educational changes towards a chosen destination, educators can see a somewhat different teaching approach for a selected few (say the lowest 20 percent of achievers) as a threat to the overall philosophy or chosen practice. It is sometimes hard to convince them that it is possible to go by a different route to the same outcomes for some children who have not responded to the general system.

Success is relative and time-limited. The biggest threat to survival follows the success of a new intervention program. An innovative program that is getting good results has many supporters in the growth stage. Once it is in place it is taken for granted. More than that, it is a well-known fact that preventive programs, once implemented and effective, destroy the evidence that they are needed, and after a time without the evidence before it the public, politicians or educators may gradually reduce the program's resources and effectiveness. However, there will be a lag time before the systemic effects of the innovation are noticed and a further period before they can be ignored.

In this paper I have tried to contrast the ease with which Reading Recovery children achieve what seems to be the impossible task of reaching average levels of performance in most cases, with the continuing challenges of the educational enterprise of making a valued intervention live in an education system. Dalin (1978), whose interesting work found ready application to this project, sums up my sense of 16 years of work.

> Educational innovation . . . is not a magic shortcut to educational wonderland. It is not a bag of tricks easy to apply to troubled school systems. It is difficult, time-consuming, energy-exhausting, and costly. There is no single way to improve the teaching-learning process in our schools.

In the decade ahead the half-life of the program will be plotted. Many innovative educational programs are not developed, explored and continued, and the easy summary is that nothing works. "When work shows signs of success, why is the harnessing of the innovation to the system not a real issue?" asked White (1979, p. 286). Why do critics consider it important that the innovation take account of all emerging theoretical guesses, and the evidence from experiments under special conditions, when they give little or no attention to theories about:

- mounting the innovation in a system
- replicability
- variance in different settings
- and how the program can change in response to new evidence and yet be considered the same program?

Implementation and dissemination have their own bodies of theory and their own evaluation criteria and innovations do not last unless due attention is paid to these aspects of an innovation. It is these issues which I have tried to address in this paper, and they are indeed complex.

References

Bart, D. S. (1984). The differential diagnosis of special education: Managing social pathology as individual disability. In L. Barton & S. Tomlinson (Eds.), *Special education and social interests*, pp 81-121. London: Croom Helm; New York: Nichols.

Bloom, B. S. (1983). *Human characteristics and school learning*. New York: McGraw-Hill.

Carrier, J. G. (1984). Comparative special education: Ideology, differentiation and allocation in England and the United States. In L. Barton & S. Tomlinson (Eds.) *Special education and social interests*, pp 35-64. London: Croom Helm; New York: Nichols.

Clay, M. M. (1979; 1985). *The early detection of reading difficulties*. Auckland: Heinemann.

Clay, M. M. (1982). *Observing young readers*. Portsmouth, NH: Heinemann.

Clay, M. M. (1987). Implementing Reading Recovery, systemic adaptations to an educational innovation. *New Zealand Journal of Educational Studies, 22*(1), 35-58.

Clay, M. M. (1990). The Reading Recovery programme, 1984-1988: Coverage, outcomes and Education Board district figures. *New Zealand Journal of Educational Studies, 25*(1), 61-70.

Clay, M. M. (1991). *Becoming literate: The construction of inner control.* Auckland: Heinemann.

Clay, M. M., & Watson, B. (1982). An in-service program for Reading Recovery teachers. In M. M. Clay (Ed.) *Observing young readers*, pp. 192-200. Portsmouth, NH: Heinemann.

Dalin, P. (1978). *Limits to educational change.* Basingstoke: Macmillan.

Dalin, P., & Rust, V. D. (1983). *Can schools learn?* Windsor: NFER-Nelson.

Dunkeld, C. (1991). Maintaining the integrity of a promising program: The case of Reading Recovery. In D. DeFord, C. A. Lyons, & G. S. Pinnell (Eds.) *Bridges to literacy.* Portsmouth, NH: Heinemann.

DeFord, D., Lyons, C. A., & Pinnell, G. S. (Eds.) (1991). *Bridges to literacy.* Portsmouth, NH: Heinemann.

Dyer, D. (1992). Reading Recovery: A cost-effectiveness and educational outcomes analysis. *Spectrum, 10*(1), 10-19. Arlington, VA: Educational Research Service.

Gaffney, J. S., & Anderson, R. C. (1991). *Two-tiered scaffolding: Congruent process of teaching and learning. Technical report 523.* University of Illinois: Center for the Study of Reading.

Goodlad, J. I. (1977). *Networking and educational improvement: Reflections on a strategy.* Washington, DC: NIE.

Hatry, H. D., Winnie, R. E., & Fisk, D. M. (1981). *Practical program evaluation for state and local governments.* Washington, DC: Urban Institute Press.

Huck, C. S. (1983). *Reading Recovery of failing first graders; research proposal to NIE.* Columbus: Ohio State University.

Huck, C. S., & Pinnell, G. S. (1983). *Proposal for a Reading Recovery program in Ohio* [submitted to the Columbus Foundation]. Columbus: Ohio State University.

Huck, C. S., Pinnell, G. S., Holland, K., Peterson, B., Sheldon, B., Steel, L., & Woolsey, D. (1985). *Reading Recovery in Ohio: An early intervention effort to reduce reading failure*, draft report. Columbus: Ohio State University.

Lindsay, G. A., & Wedell, K. (1982). The early identification of educationally 'at-risk' children revisited. *Journal of Learning Disabilities, 14*, 212-217.

Lyons, C. A. (1989). Reading Recovery: An effective early intervention that can prevent mislabelling children as learning disabled. *Urban Education, 24*, 125-139.

National Diffusion Network. (1992). *The Reading Recovery program, 1984-1991: An executive summary.* Columbus: Ohio State College of Educational Reading Recovery Center.

Pinnell, G. S., DeFord, D. E., & Lyons, C. A. (1988). *Reading Recovery: Early intervention for at-risk first graders.* Arlington VA: Educational Research Service.

Pinnell, G. S., Lyons, C. A., DeFord, D. E., Bryk, A. S., & Seltzer, M. (1991). *Studying the effectiveness of early intervention approaches for first grade children having difficulty in reading.* Ohio State University report to the MacArthur Foundation. Columbus: Ohio State College of Education Reading Recovery Center.

Robinson, V. (1989). Some limitations of systemic adaptation: The implementation of Reading Recovery. *New Zealand Journal of Educational Studies, 24*(1), 35-45.

Rowe, K. (1990). *Literacy programs study—Report of the 1988-1989 results.* Melbourne, Victoria: Ministry of Education.

Smith, J. (1986). The Reading Recovery programme. *Australian Journal of Reading, 9*, 201-208.

Wheeler, H. (1986). *Reading Recovery: Central Victorian field trials, 1984.* Bendigo: Bendigo College of Advanced Education.

White, S. H. (1976). Developmental psychology and Vico's concept of universal history. *Social History, 43*, 659-671.

White, S. H. (1979). Old and new routes from theory to practice. In L. B. Resnick & P. A. Weaver (Eds.), *Theory and practice of early reading*, vol 2, pp 285-298. Hillsdale NJ: Erlbaum.

Wolf, R. M. (1984). *Evaluation in education*. New York: Praegar.

Wolfson, B. J., & Timmerman, L. (1985). *A study of Marie Clay's Reading Recovery program, 1984-1985*. Paper presented to mid-South Education Research Association, New Orleans, 1984.

Wood, D., Brunner, J. S., & Ross, G. (1976). The role of tutoring in problem-solving. *Journal of Child Psychology and Psychiatry, 17*, 89-100.

Wright, A., & Prance, J. (1991). *Evaluation of the first Surrey Reading Recovery programme*. Kingston-upon-Thames: Surrey County Hall.

READING RECOVERY IN NEW ZEALAND: A REPORT FROM THE OFFICE OF HER MAJESTY'S CHIEF INSPECTOR OF SCHOOLS

Preface

"Reading Recovery is a system intervention . . . it is much more than a set of procedures to be used with a child. It is a way of establishing an early intervention programme in an education system in order to reduce reading difficulty in the primary school."[1]

1. Purpose and Organisation of the Visit

1. The purpose of the visit was to study the scheme in its original setting and in the context of the initial reading instruction where it is offered as 'something extra' for those children who are making a slow start to reading, at the end of their first year of schooling. The bulk of HMI's time was spent visiting: Reading Recovery lessons; training and continuing contact sessions for Reading Recovery teachers; primary school classrooms in both maintained and independent schools in Auckland, Wellington and Christchurch.

In addition, time was spent in: briefing sessions at National Reading Recovery in Auckland; and in conversations with the Chief Executive of the Ministry of Education and her staff, with recently retired District Senior Inspectors who had fostered the early development of Reading Recovery, with the Principal of Auckland College of Education—responsible for administering Reading Recovery in the Auckland area—and with his staff, with Reading Recovery tutors in each of the cities listed above, with the parents of current and former pupils in the scheme in Auckland and Wellington, with a secondary school headmaster in Wellington and with researchers at Victoria University in Wellington and at the University of Canterbury in Christchurch.

2. The New Zealand Education System

2. The population of New Zealand stands at some 3.3 million, the great majority of whom are of European origin (Pakeha), approximately 400,000 are Maori, with a further 3-4 percent from the Pacific Islands, some being relatively recent arrivals. Recent years have also seen a shift of population from the South Island to the North, making Auckland, with a population of 815,000, one of the largest cities in the Pacific region.

3. The structure of the education system in New Zealand is outlined in Table 1. Responsibility for education policy is exercised by the Ministry of Education, and for its delivery by a number of freestanding agencies, recently established by the Government and, in particular,

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[1] From the *Information Leaflet on Tutor Training* distributed by Auckland College of Education on behalf of Reading Recovery, July 1991.

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Two senior members of Her Majesty's Inspectorate (HMI), both now retired, visited New Zealand in 1992 to evaluate Reading Recovery in its home base before UK government funds were committed to the program. The visit and the report were both collaborative: Graham Frater (Staff Inspector for English) wrote the report which is reproduced herein and Brenda Staniland (Staff Inspector for Early Years) acted as advisory editor.

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Table 1
Reading Recovery End of Year Summary

Year	Schools operating Reading Recovery Programmes	NZ 6 yr old population No.	Children entering programmes		Children discontinued		Children responding but needing more		Children not responding		Children leaving school prog incomplete		Children in the programme with Reading Recovery %
			No.	% (of national pop 6 yr olds)	No.	% (of chn entering programme)	No.	% (of chn entering programme)	No.	% (of chn entering programme)	No.	% (of chn entering programme)	
1984	409	49,574	3,200	6.4	2,036	63.5	867	27.0	128	4.0	176	5.5	
1985	More than 630	51,211**	5,323	10.7	3,093	58.1	1,615	30.3	238	4.5	357	6.7	24.1
1986	838	49,044	7,468	15.2	4,536	60.7	2,097	28.1	360	4.8	475	6.4	25.2
1987	Up to 950	49,789	9,240 7,517+	18.6 15.1	5,904 4,463	63.9 57.5	2,509	27.2	313	3.4	512	5.5	26.0 21.1
1988	Up to 1,107	49,482	10,511 8,332+	21.2 16.8	6,494 4,666	61.8 56.0	++ 2,976	28.3	390	3.7	618	6.2	26.7 21.2
1989	More than 1,193	50,042	11,968 9,892+	23.9 19.8	7,511 5,435	62.8 54.9	++ 3,230	27.0	503	4.2	724	6.0	29.5 24.4

* This includes children to be continued on the programme the next year, and children not doing so because of various reasons.

** 1984 six year old population.

+ Estimate of children entering programme and not carried over from previous year.

++ A number of these children remained in school but were unable to continue programme, 244 or 8.2% in 1988, and 271 or 8.4% in 1989.

by the Boards of Trustees of the individual schools. No local education authorities stand at an intermediate point between government and school, as in the United Kingdom, but the recently established Education Review Office is charged with Quality control, inspecting schools on a three-year cycle.

4. The New Zealand education system, following a major review in the late 1980s, has undergone restructuring on lines which are familiar to us in the United Kingdom: 'bulk funding' for schools (Local Management of Schools), the curtailment of administrative structures, with those surviving being put on a business footing to sell their services on a 'cost recovery' or subscription basis to their schools and, in general, a devolution of powers, responsibilities and administrative freedoms to the schools, their heads and trustees. At the curricular level, the Achievement Initiative is leading to reappraisal and to the gradual writing of a National Curriculum with Programmes of Study, Attainment Targets, and Statements of Attainment organised as a progression of levels, along with a proposed assessment system, the spirit, if not the details of which is also familiar to a visitor from the British education scene.

5. In 1990 there were 420,426 pupils undergoing primary education (aged 5-11) in 2,530 schools (state and private) of whom no more than 12,890 were in private primary schools; the majority were in the State system, chiefly in primary schools, though, in country areas especially, other age patterns may be employed for organising the delivery of education. A further 119,026 children were receiving preschool education in a wide variety of types of institution and the numbers of pupils receiving secondary education stood at 230,156. In the same year, the national pupil-teacher ratio in state primary schools was 19:3 (in secondary schools it was 15:74). Although compulsory education does not begin legally till a child is six, in practice virtually all five-year-olds are enrolled at primary school, customarily on their fifth birthday.

3. Summary of Findings

6. Reading Recovery in New Zealand is a national programme which provides individual help for pupils who are falling behind in their reading after one year of schooling.

- It is both highly structured and closely differentiated, according to the needs of the individual child.
- An integrated approach is adopted towards reading, where both meaning and the full range of analytic and decoding strategies, including phonic cueing, are carefully taught. In addition, support is provided in a wide range of further language skills, each carefully integrated with the work on reading. Writing, spelling, speaking and listening all feature prominently in every lesson.
- The great majority of pupils who undergo the programme reach its objective of matching the average band of reading attainment in the classes from which they are drawn; and most maintain the gains they have made.
- Pupils whose reading improves as a consequence of the programme are reported often to make additional gains—in confidence, school attendance and in other subjects, including mathematics.
- Much of the observed success of the programme is owing to the rigour of the specific training it provides, its comprehensive quality assurance structures, the coherence of its organisation on a national scale and the central provision of its funding.
- Indirect benefits of the programme include the presence of a highly trained early years reading expert in almost every primary school and raised expectations concerning the limits of what is possible in reading progress.
- Though conceived in New Zealand, there is good evidence to show that the programme can work effectively in quite different educational structures.

7. In New Zealand, Reading Recovery is offered in the context of an education system which clearly gives very high priority to securing initial literacy. This was evident in:

- The unchallenged prominence of reading in the New Zealand primary school curriculum and in the time devoted to reading in the early years in schools;
- The free issue to all maintained primary schools of a reading scheme, of guidance on that scheme and of some supplementary texts;
- The structured approaches to the teaching of initial reading which were recognisable in all the primary schools visited;
- The careful structuring of and the time devoted to initial reading and to language instruction in the initial training offered to prospective teachers in New Zealand's colleges of education—the time allocation is approximately double the minimum requirement for English in the Secretary of State's criteria for the approval of primary phase initial teacher training courses in England.

4. What is Reading Recovery?

8. Reading Recovery is described by its author as "an early literacy intervention programme designed for children who are clearly at risk in literacy *in a good classroom programme*" [1] (our italics). It is important to note both the breadth and the limitations established by such a definition. The scheme is designed for individual pupils who are falling behind in their reading despite the best endeavours of their teachers and schools; it is addressed to their specific needs. If overall standards are low in a particular class or school, or indeed more broadly, we should not look to Reading Recovery for a remedy, but seek to identify and to correct wider and more complex failings. Nonetheless, as was signalled at the head of the Preface and as will appear in this report, by addressing specific needs and by virtue of its associated structures, the scheme, if fully implemented, is of considerable significance for an education system as a whole.

9. The early nature of the intervention is particularly important. It was described to HMI as a 'second chance at a first chance in learning to read.' Characteristically in New Zealand, pupils are individually and formally assessed, by the application of a wide range of assessment instruments, after one year's schooling, around their sixth birthday; normally, this is the only point of entry to Reading Recovery. Pupils diagnosed as needing to enter the programme do so, according to the priorities of their needs, during the year following this diagnosis. In practice, the scale of the scheme now permits it to be offered to around 20 percent (see Table 1) of pupils in the qualifying age group. Actual numbers and percentages will vary from school to school and between classes, but a clear rule of thumb operates which explicitly targets need: the children whose reading and writing are most at risk in the class should carry the highest priority. And it is stressed that no other notions, like biddableness or an apparently higher ability which might make for more rapid success, should be permitted to supersede this criterion.

10. The nature of the intervention is especially important: it is individual tuition; it is highly structured; within a common format, it is differentiated according to the diagnosed needs and progress of the individual child; its aim is to make its selected pupils into independent readers, placing them on a par with the average reading attainment of the classes from which they are drawn.

Reading Recovery lessons last for only half an hour a day, but occur every day for each child while they remain on the programme. Though they require pupils to be extracted from class, for the bulk of the day the pupil remains in class with his or her peers. This requires close liaison between the class teacher and the Reading Recovery teacher, and in general this works well—not least because it is customarily the class teacher's diagnosis which leads to the child's identification in the first instance. The lessons take place in secluded spaces reserved for the purpose, where pupil and teacher can work together without interruption and where carefully selected books, and sets of simple equipment and stationery recommended for the work, are readily available. It is a condition that a school asking for teachers to be trained in the Programme should set aside and equip such spaces.

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[1] New Zealand Ministry of Education, Clay and Tuck, *A Study of Reading Recovery Subgroups* (1990).

A Reading Recovery Lesson

11. The Reading Recovery lesson is a highly organised, intensive and, it must be stressed, enjoyable occasion. Moreover, it is not confined to reading alone—writing and a good deal of speaking and listening also feature strongly. A typical lesson observed by HMI followed a clear pattern. It began with the child rehearsing the spellings of a small number of words she had learned to write with increasing fluency over a period of several days. This was followed by her reading aloud of two books she had worked on with her teacher in recent lessons and was already confident with—these she chose for herself. In turn, these were followed by her reading of the new book she had read the day before. It was during this phase of the lesson that the teacher also made a diagnostic check, in the form of a running record, on the pupil's progress. This rather harder reading task was followed by some intensive work on word-building, where she constructed a range of words belonging to the same spelling family and made use both of a chalkboard and of magnetic letters on a metal surface. She would use this to inform the planning of what the next day's lesson might be for this pupil. A conversation with her teacher came next—they talked about some of her recent classwork and the pupil composed a short statement of her own about it which she attempted to write down. Every error she made was scrupulously picked up by her teacher and used as an occasion for an intervention, after which a fair copy was made by the pupil. This 'story' was read back by the child, then written down again by the teacher, but on a strip of card which was cut up with scissors, each word being read aloud again by teacher and pupil together as it was sliced off. The child reassembled the cutup story, after which it was put in an envelope for her to take home to show her family and to recompose as often as she might wish.

12. The introduction of a new book began the vital closing phase of the lesson: it was thoroughly previewed—hard words rehearsed, matters of expression and intonation experimented with, its pictures scrutinised and its characters and storyline discussed, before the reading itself began. It was a model of effective practice, not least because it was all carried out with a combination of clear purpose and evident enjoyment. This reading of a new text clearly made more demands than the known books she had read earlier. The teacher's interventions were even more important now than before, but they followed the same principles: self-correction was singled out for praise, previewed words were picked up where necessary, prompt attention was drawn to near misses (where a similar word which made sense was substituted) and a range of techniques deployed when the child became stuck. These included recalling an earlier use of the same word, a recourse to the magnetic letters, a rereading of earlier parts of the same sentence, and others – in short, the use of a wide range of cueing strategies: phonic, visual, syntactic, analogy and meaning. Finally, the new book was read aloud again by the child and the teacher together, with the teacher's reading fractionally behind that of the pupil so that it might reinforce success or pick up any residual errors, though this was not an inflexible rule for every lesson. The lesson concluded with the child being invited to take a book home to read, either on her own, or to her family. This would not be today's new book, but one that she was already fluent and confident with; however, it would not be too long before today's would form part of that familiar repertoire. It is worth noting at this point that, though parents are encouraged to play a supportive role in the work in this way, and are consulted about their child's selection for the programme and kept fully informed about progress, Reading Recovery is designed, in the end, to be able to operate effectively without active parental help. For a child's first two weeks in the programme—the phase described as 'roaming around the known'—this latter element, the new book, is omitted and the lessons are geared to diagnosis, confidence building and familiarisation between pupil and teacher and to the reinforcement and consolidation of the child's existing strengths.

13. It was plain, both from observation, as well as in the extensive literature about the programme, that the chief thrust of a Reading Recovery lesson is towards making pupils into independent and autonomous readers. This fostering of self-reliance was clear in the details of the lesson, right down to particular phrases which are becoming characteristic of Reading

Recovery teaching. Praise and the reinforcement of success are central: they are used to build confidence in pupils who may have begun to feel that they were failing, to show them where they are catching on, to make clear that they are already doing some of the right things and that they can do them again by themselves. Indeed, informed by their close training in diagnosis, the teachers do not hesitate to say explicitly where a new hurdle has been effectively conquered: *"I liked the way you did that."*

Such an approach is not confined to confidence boosting alone: it is also geared to helping the child to be conscious in deploying her growing range of reading techniques. The same strategy is used when an error is made which the teacher believes the child can correct for herself unaided; confidence is expressed that she can get it right and she is asked to: *"Try that again."*

Because of the teachers' diagnostic skills, such a strategy is seldom a gamble; it is an informed professional estimate—and is usually justified. Closely linked with this theme is that of establishing and building upon success. Success is built into the child's experience of reading and provides the essential planks of further progress. Hence the planned reinforcement the child receives by working on texts she is already familiar with; hence too the fact that the text which goes home is one on which success has already been gained; and hence, above all, the extensive previewing which precedes the first reading aloud of the day's new book. Previewing and recall are also fully employed in those parts of the lesson when familiar texts are rehearsed again, though the extent will vary according to the teacher's judgment of the needs of the child.

14. A brisk and lively pace was also an abiding characteristic of the Reading Recovery lessons seen. It is much more than a generally desirable feature, such as HMI might hope to see in most good lessons: it is a vital element in the success and cost-effectiveness of the programme and forms a key theme in the training of Reading Recovery staff at all levels. Its importance is twofold. For the individual pupil, the gap between their initial level on entry to the programme and that of the rest of their class can sometimes be formidable. Accelerated progress is essential: the child must improve not only much faster than he or she has been progressing to date, but faster than other children in his or her class if he or she is to reach and maintain their average level of attainment and progress henceforth. Indeed, because a measure of regression must be expected on discontinuation from the scheme, it is customary to ensure that the child can work at one or two levels above that of the class group average before discontinuation occurs. In a more general sense too, pace is a key element in the cost-effectiveness of the scheme as a whole and for the same reasons as might be recognised in an industrial, or business context. Since it is a scheme of individual tuition, the faster the progress made by any one pupil on the way to passing out from it (being 'discontinued') the greater will be the number of other pupils who can be handled during the course of a year by the same teacher; and the lower will be the unit costs of running the scheme. Speed, so long as it is consistent with quality, involves the most efficient use of a costly resource, namely the teacher, who has added specialist training in Reading Recovery to her existing professional armoury.

5. Evidence of Effectiveness

15. Lessons of the kind described in the previous chapter are the staple of Reading Recovery. As observed by HMI, they gave every sign of being effective. The pupils attending the lessons not only were not cowed by the experience (even in the presence of a stranger with a funny accent sitting in a corner of the small room), they arrived with readiness and enthusiasm, showed no signs of distress when they met hurdles and generally left the lesson in a cheery, buoyant manner at the end. The individual attention, the success they had gained and the reinforcement they had so clearly received, were plainly contributing to their self-esteem and confidence. More important still, their progress was directly discernible. It was manifest in the fluency with which now familiar books were read, as well as in a host of small triumphs with new words and concepts during the course of the session. In one example this conceptual growth was especially clear in that stage of the lesson where the magnetic letters were used: a small boy was observed at the very moment when he perceived the relationship between the spellings of different words in a particular 'word family.' His smile of pleasure and the teacher's reinforcement made it a memorable occasion. And many occasions of less moment were also seen. Most typical, perhaps, were those points where, being asked to try again, the children succeeded and could feel their growing command of text and technique. Particularly striking was the confidence that some pupils felt which permitted them to volunteer an aside about a character, a situation, or a picture during the course of their own reading aloud: it demonstrated that they were not only grasping the patterns, but were engaging reflectively with the meaning of the text. It also showed that they were able to control their reading effectively and confidently enough momentarily to suspend, and then return to, its sequence—no mean feat.

16. Parents were an important source of evidence of the effectiveness of Reading Recovery and HMI met several groups of parents who were together representative of New Zealand's wide range of communities, in both Auckland and Wellington. Their response was a powerful endorsement of the effectiveness of the scheme with regard to their own children. From their conversations, several common threads also emerged clearly. Most prominent perhaps was their suggestion that, quite apart from the obvious reading progress their children had usually made, attending Reading Recovery had made the children more confident both about their reading and about their school work as a whole. Indeed, several traced recent spurts of progress in other subjects, including mathematics, to the gains made in reading. Some also mentioned that poor reading had affected the school attendance records of their children, but that with their recent improvements, these had changed markedly: school was now enjoyable, not a source of worry or silent humiliation. In addition, one parent noted that her own concerns about her daughter's reading had been picked up by the school, and Reading Recovery embarked upon, without the child being aware that she had been experiencing difficulties. This provided an almost case-book instance of the effectiveness of the "catch 'em young" philosophy underlying the scheme. Other parents valued in particular the regular diagnostic reporting they received both while their children were in the programme and for a time afterwards. All had been invited to attend lessons where they could observe their children at work on the programme; several had taken the offer up and all who had done so were pleased and impressed by what they had seen.

17. Conversations with Reading Recovery teachers and tutors, with the National Coordinators, and with headteachers yielded other kinds of evidence of effectiveness. In all cases, there was strong reference to the direct benefits which individual children had derived from being in the programme and to how few had needed to be referred on for further assistance after being in it. Indeed, there were some who argued that so high was the success rate of the scheme that it called into question the incidence, if not the very concept, of dyslexia, or specific learning difficulty in the field of reading. An immediate practical benefit identified by the schools was that with Reading Recovery dealing with the children whose problems were most severe, class teachers had more time to give individual help to other pupils with less severe difficulties. Other broader benefits were also identified. The most obvious of these was, perhaps, the conviction which those trained in the scheme had of its value and the loyalty it attracted among them. This was particularly plain among the most highly trained—the tutors and coordinators. If in educational matters a belief in what you are doing and the way you are doing it is a serious contributor to effectiveness—and it does seem to be—there can be few other cases where such convictions, associated with a firm grasp of both the philosophy and the evidence on which a scheme is based, are so widely and deeply shared by participants in the same educational project.

18. Headteachers and tutors identified other broader and less intentional benefits. These were connected with the presence, in each school, of one or two teachers highly trained in the teaching of early reading. The most obvious perhaps was the culture of reading awareness this presence helped to propagate. Their generally evident successes with pupils whose problems had been beyond the reach of ordinary class teaching not only intrigued their colleagues but made them ask questions, not least about their own practice. The Reading Recovery teacher was seen as a source of readily accessible expertise upon whom others might, and did, call when problems arose. Though clearly not part of her contract, she was often used to contribute to the school-based inservice training of her colleagues and to advise on materials and approaches. In general, her presence led to a wealth of informal exchanges about reading which were held to have helped to enhance the skills of others. Owing to its perceived success, Reading Recovery has acquired high prestige throughout the New Zealand education system: involvement in it is plainly seen as enhancing a teacher's skills—and promotability—and there is a ready source of volunteers to take the training.

19. Our informants also identified other more direct benefits deriving from the scheme, not all of which may have been planned from the start. For the most part, these were connected with the exchanges between the class teacher of a Reading Recovery pupil and the specialist conducting the recovery. Following her own initial identification of the children in her class who need specialist help, the class teacher receives accurate diagnoses of each pupil's strengths, weaknesses and progress in reading during the intervention period. The measured evidence of the 'before' and 'after' achievements of pupils involved in the scheme is shared between the two. The fact that pupils with manifest difficulties are seen to have been turned around makes it clear that no child can be written off as unteachable. It is a direct contribution to the raising of expectations. Such analytical techniques also contribute directly to the aftercare of pupils who have been discontinued from the scheme, a key role for the class teacher who must acquire the skills, if she does not already have them. The recording and diagnostic procedures of the scheme help teachers to identify the positive attainments of discontinued pupils as a platform for the planning of their further progress. And these are messages whose application to the needs of other pupils are not easily missed.

20. Conversations with a high school (13-18) headmaster in Wellington provided further evidence of effectiveness, which he attributed to the scheme. His school regularly tests its new pupils on entry and, with minor adjustments owing to slight changes of entry, these tests had yielded a steady pattern in which approximately 25-30 percent of first year pupils had been identified as having significant reading difficulties on entry to the school. At the start of the school year, in February 1991, this regular pattern changed sharply, the tests showed a clear drop in the numbers of 'at risk' readers, by approximately 50 percent. The decline in the numbers of those with difficulties was seen to have held at the start of the new school year in February 1992. This pleasing phenomenon prompted him to investigate further, and he found that each of the primary schools feeding pupils to him through a group of middle schools had been among the early Reading Recovery cohorts. The timing of the decline in his inheritance of problem readers coincided with the ages of the pupils in those early client groups. This was not punctiliously tested evidence, though the school's objective data is available, nor would our informant make that claim. But it strengthens the *prima facie* case for effectiveness which emerged from other informants. And of equal importance, perhaps, it begins to suggest that gains made in the programme may be holding in the longer term, though this is not a claim in justification of the scheme which its inventor will make.

21. Careful record keeping obtains not only at school level but at local and national levels too. Much of this evidence is already in the public domain, either in the summaries of statistics related to the scheme, produced by the New Zealand government, or in academic journals, with many of the articles written by Professor Clay herself. It is not the purpose of this publication to review statistical evidence of this kind, nor would that have required HMI to make an overseas visit. Nonetheless, some reference to that body of data may be of use; it helped to prompt the visit in the first instance and provides an impressive record in itself. Close and detailed evidence of this kind should be sought elsewhere: what will be offered here is a broad brush picture in as summary form as possible, though some further details are given in Table 1.

- Children are selected for entry to the scheme, and released from it, by the careful application of agreed criteria. In general, they reach the criteria for discontinuation with between 12 and 20 weeks of the daily half hour lessons described earlier. On average, discontinuation criteria are reached after 16 weeks of intervention.

(*Discontinuation* is not as brutal as it sounds, nor is it a casual affair: it is the procedure applied to the great majority of pupils whose needs have been met by the scheme and who are most carefully judged to have gained sufficient independence to be able to survive in their own classes with what Professor Clay describes as "a not-noticing teacher—the most risky scenario;" it marks the point at which this measure of independence is agreed to have arrived.)

- Though subject to variation and qualification, if a child has not met the discontinuation criteria with 20 weeks or so of tuition, he or she is considered for 'referring on.' Onward referral is the alternative procedure provided for those few pupils who are judged not to be making the kind, especially the speed of progress for which the scheme was designed. When this has been diagnosed, usually after a protracted period, and following a series of case conferences, the child is referred on to an education psychologist for further diagnosis and guidance on placement. Longer term help for these pupils is customarily provided by reading teachers or services organised on a more local basis than Reading Recovery itself. The pupils in this group are sometimes described as third wave children because, following the ordinary provision of the infant class (the first wave) and the something extra of Reading Recovery (the second wave), they require a further set of procedures and support to secure their literacy.
- Professor Clay records that "about two thirds of the annual intake into the programme are discontinued during the calendar year in New Zealand and in each country where it has been tried." The overall discontinuation rate is more favourable than this might appear, because among those not discontinued during the calendar year are pupils who were entered later in the year and are carried over to the next. Expressed as a percentage of the national six-year-old cohort which qualifies for Reading Recovery, those not responding represented less than one percent during the period 1984-1988. As a percentage of those entering the scheme, those not responding varied between 3.4 percent and 4.8 percent during the period 1984-1989.
- The reach of any programme of this kind is the product of the resources and the priorities accorded to it by decision-makers. In New Zealand, as the benefits of the scheme became recognised and it was adopted as government policy, the numbers and the proportion of pupils reached by the programme rose steadily between 1988 and 1989, starting at 3,200 children (6.4 percent of six year olds) and rising to 11,968 (23.9 percent), though some double counting occurred in the later statistics owing to those children referred to above who joined late in the year and were neither discontinued nor referred on, but were carried forward—they probably accounted for between three and four percent in the overall figures.
- One of the chief points of concern for those thinking of introducing Reading Recovery must be whether its effects last. The issue has been quite widely debated and questions raised. Much will depend on the quality of the support and teaching which former Reading Recovery children are given long after they leave the programme. There is also the perfectly proper argument made by Professor Clay that we should not seek for what cannot be proved: that long-term effects (longer than about three years) cannot be scrupulously identified. The longer the term, the more we should expect other factors to intrude, and the more difficult it becomes to distinguish the effects of this one input from those others. Nonetheless, it is possible that some positive long-term evidence may be emerging, as was suggested by the data of the Wellington secondary school noted in paragraph 20.
- Evidence in the shorter term is much less open to debate and HMI were given access to figures collected over the period 1985-91 by the Mana Reading Recovery Centre in Wellington. They are given in Table 2 and show that, during the previous three years in each case, *the vast majority of pupils (97 percent or more) who had been through the programme maintained and improved their reading ability following discontinuation*. Such figures were collected with special care by this centre, but were typical and could be replicated by the others. The very small percentage who had slipped were offered 'refresher tuition.' The slippages were chiefly attributed to illness, absenteeism, home and community factors, and to unsatisfactory subsequent tuition. The last was seen to involve one or more of the following:

frequent changes of teachers over time (3-4 a year and frequent supply staff);
several changes of teacher in a day. Some had as many as four teachers a day, as well as changes of classroom;
no instructional reading after discontinuing;
no opportunity to read for themselves books at an appropriate level of difficulty after discontinuing;
receiving instruction on material which was inappropriately pitched—either too easy or too difficult.

- What also emerges from these figures is the importance of establishing a monitoring regime to follow the progress of all the pupils for whom the programme has proved successful. What has been established is a process of fortnightly checks applied by the Reading Recovery teacher and the class teacher, gradually lengthening to monthly and yearly checks.

22. The low and generally stable figures for the proportions of pupils referred on for longer term help prompt further thought. Most prominently perhaps, they suggest that the scheme may have told us something fundamental about the remediable nature of much of the incidence of early reading difficulty encountered not only in New Zealand but in similarly long-established education systems in other advanced industrial societies, such as our own. They provide a baseline of expectation for further quality control in New Zealand, and a goal of comparison and measurement for those other systems to aim for. They are also of direct service to practitioners and policymakers together. They show what can be achieved by the combination of decisive policy and professional will. In New Zealand the clear recognition of the issue at policy level led to the provision of the resources for a national scheme of individual teaching and its associated infrastructure. The professional dimension was notable in the initial research (skillfully brought to the attention of the policymakers), the design of the system and its training procedures, the acquisition of enhanced teaching skills and in the dedicated application of them.

Table 2
Follow-up study: Mana Reading Recovery Centre

Year	Number of children followed up	Maintained/improved reading ability %	Refresher tuition %
1985	275	97.0	3.0
1986	489	99.2	0.8
1987	628	99.8	0.2
1988	661	99.4	0.6
1989	522	98.5	1.5
1990	742	99.6	0.4
1991	947	98.95	1.05

6. The National System: Training and Quality Assurance

23. The Reading Recovery lesson described in Chapter 4 was one of many observed during HMI's visit. It was also typical, not only in its procedures and its subtle adjustment to the diagnosed needs of the pupil concerned, but in the high quality of the professionalism and teaching skill displayed. This consistency of quality was no accident; it is the product of a series of planned and interlocking features:

- the training given to Reading Recovery teachers by full-time tutors;
- the record keeping systems and diagnostic regimes the teachers each maintain;
- the continuing contact with the tutors which each Reading Recovery teacher, and his or her school, must accept as an obligation for as long as they remain with the programme;
- the monitoring and support systems provided by the tutors, by the national coordinators and by the centres they run;
- the high quality and intensity of the training of the Reading Recovery tutors;
- the quality and careful selection of teachers, tutors and coordinators involved with Reading Recovery;
- the requirement that *all* involved in the scheme, *irrespective of their other responsibilities in the programme,* be directly engaged in the teaching of Reading Recovery lessons to children;
- the preparation and use of carefully graded reading books common to the scheme and of parallel texts which are similarly graded (which resemble in appearance, and have a grading system separate from but modelled on that used for the books for mainstream initial reading instruction throughout New Zealand);
- the basing of the scheme on common documents rooted in the detailed observational research of its founder, Professor Clay, to which all concerned have ready access and make frequent reference;
- the provision of national funding, locally administered, covering most of the costs of the programme.

The individual Reading Recovery lesson with a single pupil is the cutting edge of a coherent national system, the whole of which is geared to the effective delivery of that lesson. The essence of this system is its organisation as a support and quality control structure, a benign hierarchy, each layer of which is interdependent and the whole of which is clearly focused upon the children in the programme.

The Coordinators

24. At the top of the system is National Reading Recovery, the Headquarters organisation and its small staff housed in and administratively supported by Auckland College of Education. It is run by the National Director and two Coordinators; it is here, and nowhere else, that the tutors are trained and that they are assisted and overseen. A national newsletter and circulars are distributed from here, an annual conference organised, data is processed, materials are kept under constant review and visits to tutors and tutor groups throughout the country are scheduled. The centre is a receiving point for enquiries and calls for help and the hub of a national educational project of great prestige.

Reading Recovery Centres: The Tutors

25. The local Reading Recovery Centres, staffed by full-time tutors, are the heart of the system. They are responsible for the training of all the Reading Recovery teachers in their areas; for the continuing contact work (which all teachers who are on the programme in the locality must attend); for monitoring the programme's work in the area; and for supporting the teachers engaged in the scheme. This involves visiting all teachers in their training year and can mean visiting for monitoring purposes, and in the event of problem cases, in subsequent years. The Centres establish and maintain a network for all the teachers engaged in the scheme in their areas: they assist teachers in offering each other mutual support, they prompt and support their continuing professional development in reading and keep their skills finely honed. Whilst recognising teachers' needs for continuing support, the work of the centres is geared to the constant refinement of their observational skills and to strengthening their professional autonomy. All this is achieved in a notably friendly and nonthreatening manner which induces a remarkable loyalty and dedication to the programme among all associated with it.

Training and Continuing Contact: Teachers and Tutors

26. HMI had the opportunity to observe both the training and the continuing contact sessions programmed by tutors at the centres. They had much in common. In both cases they were sessions of approximately two and a half hours. Training sessions for groups of a dozen or so teachers occur at the centres, during term time, once every two weeks for a year. In the intervening period the teachers are asked to start using the programme's procedures with up to four pupils a day. Continuing contact meetings occur twice a term for all teachers engaged with the scheme throughout their time as Reading Recovery teachers.

The Demonstration Lesson

27. The first hour of a training session—often the second in a continuing contact session—comprises two examples of demonstration teaching by members of the group, each working with children they currently teach in the programme. These can be daunting occasions indeed: a member of the group is being asked to perform before her peers knowing that they will watch every move and comment in detail on what she is doing, why she is doing it and how effectively she is helping her pupil's learning. However, it is a matter of turn-taking and all must do it in the end. And most commented to us that, though certainly challenging, it was good for them. What was plain to a visitor was how good it seemed to be for their professional confidence—after the event at least. In order to mount these demonstration sessions, all the centres provided specially adapted premises: at the back of each training room was a see-through mirror behind which a demonstration Reading Recovery teaching room was located and through which the lesson could be observed. It is an essential feature of the programme's practice. While the demonstrating teacher is working with her pupil, the others gather as close to the screen as possible—one row on chairs, the other on stools to see over their heads and watch the teaching in detail. It is no silent or passive occasion: throughout the half hour, and protected by good soundproofing, the group is interrogated by the tutor on what they are observing. The pace is fast, the questions unremitting, detailed and evaluative—'why?' is their constant burden. At first, one might have felt that silent observation would have been more apt; what is aimed for, however, is the development of the rapid and accurate observational skills and responses necessary to the subtle minute-by-minute differentiation which lies at the core of so much in the programme's practice and philosophy. The discipline of the demonstration lesson serves alike the purposes of training, development and quality control. And its interrogations, not unlike the questioning the teachers are trained to apply to their pupils, are geared to promoting their practical autonomy, as well as their skills. Following the demonstrations the group reconvenes, when their first task is to reinforce the two teachers who have been behind the screen. Only when this has been accomplished does more objective analysis begin, when the supportive spirit is nevertheless maintained. Wherever HMI's visits extended—Auckland, Wellington or Christchurch—the constant high quality of the teaching seen in the less tense conditions of the daily Reading Recovery lessons was consistent with a claim for the effectiveness of this demanding practice.

28. The second hour of a training session, but often the first of a continuing contact meeting, generally comprises a teaching session directed by the tutor, in which dialogue plays an important part and the core texts written by Professor Clay are a constant source of reference. The sessions seen were conducted at an attractively brisk pace, in a friendly and lively manner which drew responses from all those present. What was particularly gratifying was to observe moments when the teachers made connections between theory and experience, bringing the latter to bear in reflecting on their own practice. In effect, they were achieving two purposes at once: constructing a framework of conceptual understanding with which to underpin and develop their own work in the programme and refining their own practice.

Tutor Training

29. No tutor training was occurring in New Zealand at the time of HMI's visit. The system had reached a point when it was possible to mount the tutor training courses every alternate year—tutor training was to resume in the 1993 academic year (which begins in February in New Zealand). This permitted the loan, in rotation, of the National Director, her two colleagues and some of the experienced tutors, to the London Institute and the other training centres which are in the course of establishment in England.

30. Training for tutors is full-time and lasts for a year. What needs to be emphasised is that the prospective tutor is being prepared for a role in bringing about change in an education system: as the leaflet about the course prepared by National Reading Recovery makes plain (see the epigraph at the head of the Preface to this report), she is not preparing individual teachers alone. The course of training for this pivotal role comprises four main elements:

- **individual teaching** of six year old pupils who are experiencing reading difficulties, using Reading Recovery techniques;
- **academic and theoretical studies** related to (a) current issues in reading and (b) the concepts upon which Reading Recovery is based. This will lead to two examination papers in reading at university first degree finals level: 'The Reading Process' and 'Issues Related to Reading Difficulties.' Study at the University of Auckland may be required for parts of these papers.
- **The development of techniques for training teachers:** observing peer trainees teach and articulating and discussing what occurred; directing observation, questioning and guiding discussion in inservice sessions for Reading Recovery teachers in training; and visiting these teachers in their schools;
- training and experience in **the planning and organisation of Reading Recovery inservice courses.**

Our discussions with tutors suggested that the experience was intensive and demanding, with a heavy assignment load, and very rewarding. It is also clear that, despite a strong theoretical element, it is a highly practical course, with half of each day being spent in schools throughout the training year.

The Training of Coordinators

31. Training for the coordinators or tutor trainers is different again: in essence it is more individually tailored than that offered to the tutors, but it contains the common element of teaching pupils with reading difficulties. In addition, it requires further academic study, usually continuing to higher degree (doctoral) level. The coordinators learn to teach the academic components of the tutor course in association with academic colleagues and receive training in tutor tuition; the professional development of tutors; the coordination and monitoring of the programme across a system; and how to assist tutors in their organisational roles in the areas covered by their centres. Training in a representative role is also included—explaining and communicating and, if necessary, defending the rationales and outcomes of the programme to decision makers, academics, parents, journalists and others.

Core Texts

32. The programme is based on the research of, and was designed by, Professor Clay. Its principles and procedures, and the evidence in which they are rooted, are set out in what has become the core text of the programme, *The Early Detection of Reading Difficulty*. All who are engaged with the project have copies. In brief, what is done is to make constant links between the experience and observations of the teachers and the rationale and theory (themselves based on observation) underpinning the scheme. The teachers are helped simultaneously both to hone their observational and practical skills and to see the reasons which need to inform the many individual adjustments they must make in their daily delivery of Reading Recovery. This constant recourse to the text helps the teachers to see what they must do and why, in order to maximise and accelerate the progression of their pupils. Other texts by Professor Clay are also referred to, especially *Reading: The Patterning of Complex Behaviour* and *Becoming Literate: The Construction of Inner Control*. This body of rigorous common reference contributes to the identifiable professional culture and cohesion of all those who work within the programme.

The Running Record

33. The requirement that all involved with the programme, at no matter what level, should teach pupils with reading difficulties, is one of the central planks in the achievement and maintenance of quality in the scheme. It is far from being an isolated one. Among those not described in detail so far is the running record. It is not unfamiliar, in its principles, to many teachers in Britain. Miscue analysis from the USA has long been familiar here in a variety of forms, while forms of running record are found in the London Primary Language Record—commended in the Cox Report—and feature as part of the diagnostic procedures in the Standard Assessment Tasks for reading at Key Stage One of the National Curriculum. The benefits of the New Zealand version of the procedure lie in its easy and rapid administration and the immediacy and clarity of its readout. It is also efficient, inexpensive and has the great virtue of being a familiar tool to most New Zealand teachers, whether trained in Reading Recovery or not. A copy of the currently used *pro forma* is given in Table 3. In essence, it is a means of recording and analysing a child's reading behaviour while he or she is in the act of reading aloud. A passage, usually a page of 100 to 200 words, is chosen from a familiar text. While the pupil is reading, the teacher applies a simple system of notation to record the way each word is handled. The sheet records the types of cues used and neglected (meaning, syntax, visual/phonic), the error rate, the accuracy and self-correction rates. In addition, the text itself is classified for its general level of difficulty. By such means, it is possible to arrive at a clear measure of progression which is closely diagnostic and which may be employed to inform the content of the next lesson, to direct the teacher to what needs particular attention, and to signal the persistence, or the conquest, of specific difficulties.

The National Scale of Reading Recovery

34. In the Auckland area, the largest single centre of population, the infrastructure required to support the programme in 1991 comprised nine tutors working with experienced Reading Recovery teachers in approximately 300 schools and with 130 schools which have a teacher undergoing initial training in the programme. In national terms, 35 tutors were required; these, in turn, were headed by the professional staff of three at National Reading Recovery (the National Director and the two coordinators). In total during 1991, 458 teachers were teaching the scheme, whilst undergoing initial training in it, and a further 1,005 teachers experienced in the scheme were teaching it in schools and attending the obligatory continuing contact sessions. Given the intensity of the work, which was plain from observation, it is not expected of teachers that they think of remaining with the programme as a permanent career commitment. And, as might also be expected, there is a constant turnover of teachers in the scheme: promotions, retirements,

Table 3. *Running Record Sheet*

Name: ____________________

Date: ________ Date of Birth: ________ Age: ______ years ______ months ______

School: ________________ Recorder: ________________

Text Titles	Running words Error	Error rate	Accuracy	Self-correction rate
1. Easy ________	________	1: ______	____%	1: ______
2. Instructional ________	________	1: ______	____%	1: ______
3. Hard ________	________	1: ______	____%	1: ______

Directional movement ____________________

Analysis of Errors and Self-corrections
Cues used or neglected (Meaning (M) Structure or Syntax (S) Visual (V)

Easy ____________________

Instructional ____________________

____

Hard ____________________

____

Cross checking on cues (Note that this behaviour changes over time.)

____

____

Analysis of Errors and Self-corrections
(see *Early Detections* page 161)

Page		E	SC	Cues Used	
				E MSV	SC MSV

movement out of and around the education system; all require the replenishment of staff. Unlike the training of tutors which is only needed every alternate year now that the programme is nationally established, the constant training of Reading Recovery teachers is a permanent requirement of the programme. In any Reading Recovery scheme established elsewhere this permanent commitment to training needs to be fully understood and budgeted for. However, training does not consist of a year of fallow: since part of the training involves early engagement with the teaching of four pupils, an element of payback occurs during the training period itself.

The Financing of Reading Recovery

35. What has been described above is a planned and coherent national system which trains teachers, which provides for their continuing development throughout their association with the project, monitors progress at a variety of levels, offers a support system for all involved and keeps them in touch with the reality of the reading problems they are all concerned with. Such coherence and the consequent successes of the programme derive much from similar coherence in the resourcing of the programme. Having demonstrated its effectiveness in the pilot years, Reading Recovery's adoption became a matter of national policy and, in translating it to the national scale, it became nationally funded. The process is complex, but its principles are simple enough: both National Reading Recovery and the Auckland Centre come under the aegis of the Auckland College of Education which receives an earmarked addition to its annual block grant from the government for the purpose. In effect, the College is the employer of the national coordinators and the local tutors. It helps with their administration and covers the maintenance of the premises, the travel and subsistence expenses of the staff and the heating, lighting, postal and telephone charges and other expenditure heads. The other centres elsewhere are attached to their local colleges of education and are similarly supported.

36. The costs of the tuition of the teachers attending the centres, for training or continuing contact sessions, are covered by the college budgets, but their travel and subsistence costs are the responsibility of their boards of trustees (school governors). Given the distances that must sometimes be travelled in New Zealand, these costs are not always slight. To the individual school must also fall the costs of reserving, maintaining and equipping a teaching space specifically for Reading Recovery teaching and for providing cover for the teacher while she is offering individual tuition. (It is part of the basis of the programme that the teacher does not teach Reading Recovery all day. In the afternoons, she will usually return to her own class, if she has one, or share and help with the work of other classes in the school.) The schools' responsibilities for staffing here are not quite as harsh as this description suggests: many receive a supplementary government grant known as 'One to Twenty Funding.' This is a scheme designed to help schools to reduce their pupil-teacher ratio, especially if they are situated in deprived areas. It is intended for the targeting of resources to identified educational needs and not for literally making each class a given size. And customarily, reading is seen as a high priority for the use of these additional government funds.

37. The costs of tutor training are also centrally borne. The year's full-time tuition is part of the cost of National Reading Recovery and comes within the earmarked addition to the Auckland College block grant. The residential, materials and travel costs of the tutors in training are the subject of a Ministry of Education grant for post-experience study, for which prospective students apply. In sum, government funding directly provided but indirectly distributed covers all the costs of the support structure of Reading Recovery and many of those directly involved with its delivery at school level.

38. It was no simple matter to obtain an estimate of the cost of putting an individual child through a Reading Recovery programme. This was not due to any lack of help, but rather to the complexity of the programme's funding in practice and to the discretionary elements which can apply at school level. Accepting a measure of approximation, and working on the basis of each pupil having an average of 16 weeks or 40 hours of personal tuition, and including the running costs of the centres, the Headquarters and other associated costs (but not capital costs), we were offered an informal estimate of $NZ 2,500 per child. In sterling, this worked out at approximately £735 at the time, but it should be treated with the utmost caution: we cannot simply translate that estimate to UK conditions where salaries in particular are not directly comparable. It remains to be seen what the costs might be in the UK.

7. The Context of Reading Recovery: The Initial Teaching of Reading and Teacher Training

39. The two HMI commissioned to visit New Zealand were asked to arrive at their estimate of the programme in the context of the country's customary provision for initial reading instruction. Accordingly, and within the limits of the time available, they visited a sample of schools on both islands, in urban and country areas, which together taught children from each of the diverse communities that comprise New Zealand's population. These visits were usually combined with visits to the Reading Recovery work which was the principal object of the journey.

Initial Reading: Basic Similarities with UK Practice

40. To enter a New Zealand primary school classroom was no strange experience: philosophies, practices, the use of display, the duration of the teaching day, the layout of classrooms, the materials, the equipment and many of the books, the warm relationships between teachers and pupils—all had much that was immediately familiar to a visitor from the UK. The spirit and most of the specified details of the Reading Attainment Target of our National Curriculum are readily found in a New Zealand classroom: mixed methods, carefully balanced so that pupils become adept at employing all cueing strategies, formed the staple of what was observed.

Some Differences

41. Within this familiar framework of aims, principles, and many details of practice, there were also several strands of significant difference. Throughout New Zealand, the primary schools employ the same core reading scheme: *Ready to Read* on which central guidance is published (*Reading in Junior Classes*, by the Learning Media Unit attached to the Ministry of Education). It is a scheme with a number of key characteristics which are directly helpful to schools and teachers. It is provided by the government, in numbers sufficient for class use and free of charge, to all maintained schools; yet they also receive annual capitation grants at levels which are familiar to British schools. This frees New Zealand schools from the burden of essential book purchasing and appears to have the discernible effect of permitting them to buy wider selections and larger collections of supplementary reading materials than are typical here. Moreover, the scheme has a number of specific features which, quite apart from its universality, are directly helpful to the promotion of progression.

- It is designed to provide a steady gradient of difficulty: the books are all readily coded to permit teachers to mark and take account of progression as they assign pupils to their next texts, either offering them a text from the next stage or one parallel to their present book.
- The levelling of the texts has been arrived at through extensive field-testing by teachers; it was not built around fixed preconceptions concerning either a specified vocabulary or sequences in the acquisition of any given aspect of reading. Their involvement in field-testing may also have served to give New Zealand teachers the strong commitment to the scheme which so many appear to have.
- Most have a strong story line or plot; they are inherently interesting, attractively illustrated and enable early readers to make use of context from an early stage.
- They have been designed with the principle that 'books should look like books' clearly in mind and are produced in a variety of formats, typefaces and approaches to illustration.

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- In their content and illustrations they take clear account of the realities of the life and constituent communities of New Zealand, presenting a world which is familiar and which matches the experiences of the country's early readers.
- They are written in a language and style which are also familiar and attractive and "that builds on the children's spoken language and on the experience of the world and books that they bring to school" *(Reading in the Junior School, p. 83).*

The universality of the scheme not only helps to support the needs of a mobile population (of pupils and teachers), but gives a sharp focus to matters of progression, helping to make them widely understood. Moreover, the principles and the pattern of levelling in *Ready to Read* have also clearly and beneficially influenced the structure adopted for the distinct and separate texts used in Reading Recovery.

42. A further significant difference lay in the amount of time given to early reading. New Zealand primary schools typically appear to give more time to language activity and to early reading than their counterparts in the UK; they are not faced, as yet, with balancing the strongly competing demands in a statutorily required range of curricular subjects. Not untypical was a rural school outside Auckland which devoted a major chunk of prime time, that is the mornings, to early reading every day; this was additional both to other specific language activities and to language work associated with other aspects of the curriculum, such as project work or social studies. As HMI's field notes recorded:

> There is a heavy emphasis on language/reading activities in the junior* classes. The first half of each morning is given to language activities leading to writing. Second half—1 hour 15 minutes—is given specifically to reading activities. Mathematics forms a major part of each afternoon session with other work timetabled at various times.
>
> **The curriculum is fairly narrowly based by English standards and concentrates on giving pupils good literacy and numeracy skills.**
>
> All classrooms are full of print-aids to pupils' reading and writing such as alphabet friezes and word lists plus displayed written work.

43. There also appeared to be a New Zealand house-style in the classroom organisation of early reading, discernible wherever HMI went, including in the private sector. It was not alien to anything which might be attempted or accomplished in a British classroom, but the organisational skills and the coherence with which the work was structured and differentiated were, in terms of our experience in England, both unusually good and unusually widespread. HMI's field notes, describing two different lessons with early readers characterise what was widely seen:

> This was a specific reading lesson. It began with a plenary reading session where all the class was assembled to work with a large-format *Ready to Read* text. The teacher read the text and interrogated the class with skill and pace. Among the issues raised by the question-and-answer session were spelling patterns, the differences between patterns, rhyme, homophones, sound/letter correspondences.
>
> Following the plenary session, pupils were assigned to a range of differentiated reading activities, individually and in groups, and according to the teacher's knowledge of their progress and needs; these activities included: reading texts while following a recorded reading on a headset; paired reading; group work with the teacher; reading materials on OHP (solo or in pairs); word formation games; solo reading from large cards; book selection from the library corner followed by silent reading.
>
> A number of well timed and apt interventions were observed, including detailed attention to some examples of pupils' written work.
>
> . . . The lesson begins with a story *Who Sank the Boat?* The children enjoy the story, joining in with the repetitive phrases. The teacher shows the book to the children as she reads, pointing to the text and discussing the pictures.
>
> The children then repeat a series of nursery rhymes and simple action songs. These are printed out on cards and the teacher uses a 'pointing stick' to follow the text. The children next play an

---

*For New Zealand junior, read infant in England action game. ' Five garden snails sleeping in the sun' which requires them to remove magnetic snails from the board and substitute the correct words for the numbers 5, 4, 3, 2, 1.

This is followed by the use of a large-format version of *Spider* which has the same text and illustrations as the classroom copies for children's use. The teacher's questions begin by probing their understanding about books, e. g. 'What is the name of the book? Who wrote it? Where do we start reading?' The children read the book together. The teacher stops from time to time to pick out single words for individual children to read. This is followed by the enactment of a simple puppet play based on the story.

The children are then grouped by reading ability to:

- choose from a box of preselected books to read for themselves; the children enjoy this, they know the simple one line of print' stories;
- use the picture story books in the class library. (This is rather less satisfactory since the choice is unguided and most children browse through several books in quick succession.);
- work with the teacher to sequence pictures with simple captions into a story which they then read together.

> **The emphasis throughout the lesson is on teaching pupils the reading process, the meaning of the text and the sequence of the story or poem. They are specifically taught the relevant vocabulary and features of print and encouraged to listen carefully, identify some beginning and ending sounds of words and relate them to the printed letter by its alphabet name."**

This was no chance harmony of practice: it was in line with the advice contained in *Reading in Junior Classes*, the handbook which accompanies the *Ready to Read* series and which, like the series itself, is available in all schools. It also links up with the initial training all teachers receive and had been reinforced by two national inservice initiatives undertaken in New Zealand during the 1970s whose materials remain in wide use. However, the authors of the handbook do not see tight organisation as important for its own sake: they stress its necessity in serving the more important underlying purpose of prompting pupils to engage with meaning and to feel and perceive both the point and the pleasure of reading:

> "Organising for reading must not become an end in itself. Too often the reading programme can become a question of juggling groups and hearing everyone read every day. This alone doesn't guarantee success. What is happening *within* the organisation is what counts—whether children are seeing reading as a valuable activity, are receiving appropriate help and instruction, and are developing independent reading interests and abilities." (p 133)

Training for the Teaching of Initial Reading: Auckland College of Education

44. As the headquarters organisation of Reading Recovery is housed in Auckland College of Education, HMI had the opportunity to learn something about the provisions made for teacher training for early years reading in one of New Zealand's leading training institutions. It should be stressed that what follows is selective and was gleaned from conversation with the college staff and the documents they provided. It is not the result of a detailed study, but has been included for the bearing it has on the contextual issues for which we were asked to have regard. As the field notes show, HMI formed a clear impression of the place given to literacy in the New Zealand initial training system:

"The very strong emphasis on the teaching of reading reflects the emphasis placed on literacy in New Zealand. There is no doubt that recently and currently trained primary teachers (5-13) are well prepared to teach reading in the normal classroom. **The Reading Recovery programme builds on a very thorough approach to teaching reading."**

45. The Auckland course is intended to produce general class teachers who also have a measure of specialist expertise in up to two curricular areas. All students must study all nine areas of the curriculum—a minimum of 40 contact and 10 hours private study (PS) on each—

priorities they clearly accorded to book purchase. Moreover, the curriculum itself carries fewer competing elements and enables teachers to concentrate far more on securing a very sound foundation of literacy in the early years. The classroom organisation of reading was generally more coherent and efficient than would normally be found in a sample of similar kind and size over a similar period of time in England.

8. Reading Recovery in Context

50. Reading Recovery can be readily viewed as the logical consequence of much that was already happening about literacy in the New Zealand education system. In particular, it exists in the context of:

- a high priority given to literacy matters over a sustained period in teaching training, both initial and inservice;
- widely shared understandings within the profession concerning the importance of reading and the nature of its processes;
- widely shared professional skills and procedures in diagnosis;
- a primary school curriculum in which early literacy has a strongly marked emphasis and relatively little competition for time and resources;
- widespread professional understandings about progression in reading deriving, in part, from the specific characteristics and nationwide use of the *Ready to Read* initial reading scheme.

In such circumstances it can be no surprise that the target group of clients for Reading Recovery was identified and a programme devised for their aid. In turn, and as a consequence of the programme, it is already clear that the New Zealand system is well on the way to identifying the next frontier, the third wave children, that small core who do not appear able to accelerate at the rates of the majority of pupils for whom the scheme is the appropriate measure. As yet, the third wave is not favoured with similar nationally coherent and systematic provision, a point which has been highlighted by its contrast with Reading Recovery.

Transferability

51. Though Reading Recovery could probably have arisen in the first instance only when it did and in New Zealand, there is no reason to suppose that it is not transferable to other education systems. Initial experiences in Surrey have been reassuring; it has also been adopted in several Australian states and the scheme is now widespread in the USA, where approaches to initial reading can contrast quite sharply with those of New Zealand or England. **The essential conditions for the success of Reading Recovery, as a system, lie in the coherence, the resourcing and the reach of the support and quality assurance structures which are put in place for its implementation.**

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DEPARTMENT FOR EDUCATION
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Rationale

This journal has been developed to provide a forum for communication among members of the Reading Recovery Council of North America and with professionals from a wide variety of disciplines. The journal has an international focus which encourages contributions by individuals with similar interests and research agendas working throughout the world. It is believed that this multidisciplinary and global perspective can make a positive contribution to the research literature. The Reading Recovery Council of North America, serving children in Canada and the United States, hopes to promote the continued engagement of those who work in Reading Recovery with their colleagues in related fields. The journal is a vehicle of communication that will disseminate difficult to obtain research and commentary, establish a network of individuals doing parallel research, and serve as a forum for ongoing discussion of issues related to literacy, teaching, and learning.

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Literacy, Teaching and Learning

An International Journal of Early Literacy

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166

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LITERACY, TEACHING AND LEARNING

An International Journal of Early Literacy

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Introduction to the Reading Recovery Council of North America

GAY SU PINNELL
The Ohio State University

THE READING RECOVERY COUNCIL OF NORTH AMERICA IS AN ORGANIZATION of teachers, administrators, and others who are interested in supporting the literacy learning of young children, especially those who are considered to be *at risk* in school achievement. *Literacy, Teaching and Learning* is a key publication of this new professional organization. The journal, published at California State University, San Bernardino, through the leadership of its editors, Stan Swartz and Adria Klein, will bring new research on early literacy learning as well as classic, hard-to-get pieces to the attention of the membership. As the first president, I offer this overview of the work of the Council.

As we enter the second decade with Reading Recovery, we have behind us the success of over 80,000 children who have become independent readers and writers through Reading Recovery. Before us, we have the daunting task of maintaining quality over a growing program that at this time includes more than 2500 sites in four provinces of Canada, 48 states within the U.S., and five U.S. Department of Defense overseas schools. There are close to 10,000 Reading Recovery teachers.

Descubriendo La Lectura/Reading Recovery in Spanish has already established a successful record and is growing to meet the needs of children in many states. As Reading Recovery and Descubriendo La Lectura continue to grow, the Council will work to sustain the capacity to serve more children each year. Membership in the Reading Recovery Council of North America (RRCNA) is a significant way to support and contribute to the professional network that creates, sustains, and generates the future of Reading Recovery in the broader context of early literacy.

One of the hardest tasks for any successful educational effort is *scaling-up;* that is, maintaining quality and consistency through a wide dissemination period. Moreover, the Reading Recovery program is continually under development; it changes all the time with refinements that are related to ongoing research. This constant fine tuning is one of the characteristics of Reading Recovery that keeps it fresh and improves its results. But, it also means that ongoing professional development is essential.

RRCNA offers a way to support continuous learning. The Council will be the nucleus for communication, professional development, and research. In addition to *Literacy, Teaching and Learning*, the Council will publish several newsletters, maintain an America-On-Line bulletin board, and promote institutes, conferences, and other educational opportunities for teachers and children.

All these efforts will help us to communicate regularly across the membership which includes: Reading Recovery teachers, university-based Reading Recovery trainers, teacher leaders, site coordinators, and a very important group called *Partners*. Partners are individuals interested in literacy learning and teaching who wish to support the work of Reading Recovery and collaborate in educational improvement for all children. RRCNA has an elected coordinating board and officers who can initiate programs to enhance continuing contact for Reading Recovery personnel as well as maintain communication among this widely diverse group. Already, in this start-up period, RRCNA has 4,500 members.

The mission of Reading Recovery is literacy for all children. The program's special role is helping young children who are having difficulty achieving success in the early years of school. In addition, Reading Recovery provides a convincing demonstration of learning and teaching that shows that the world can be different. This demonstration has had measured impact in hundreds of school districts across the United States. Reading Recovery provides convincing evidence of the effectiveness of long-term staff development for teachers and a systemic approach.

The successful implementation of Reading Recovery would not have been possible in the U.S. without thoughtful and supportive partnerships with administrators and classroom teachers in every school and school district. After all, Reading Recovery is not a program for classroom use. It is intended to be implemented alongside a sound instructional program; one that provides massive opportunities for children to read and write with sensitive, observant teaching.

The advent of the Reading Recovery Council of North America makes it possible to foster and formalize those partnerships that have been so critical to the initiation of Reading Recovery. The growth of the program has been initiated by local school districts which have led the way in six states to amend state laws providing line-item allocations from state education funds to support Reading Recovery training and implementation. Each implementation at every school has been carefully monitored for program integrity and results in terms of children's achievement.

But, like other successful innovations, the Reading Recovery leadership must be knowledgeable about the problems of *scaling*. Scaling refers to the wide dissemination of a program. That is, it starts small and innovators need only to interface with single groups of teachers or administrators. Moving to wider dissemination requires different structures because local leadership is required, a larger group of innovators must work together, and many different systems and cultures must be accommodated. In addition, management is a difficult process and becomes more complex as the project or program grows. Scaling, then, means enlarging and changing to meet new demands. Compare it to a map in which a legend provides the relationship between a small space and 100 miles. In Reading Recovery, a site with a teacher leader, teachers, buildings, administrators, and children is replicated hundreds of times across 48 states, the District of Columbia, and Canada.

According to *Education Week* author, Lynn Olson (*Learning Their Lessons*, November 2, 1994), many successful programs are "victims of their own success." Olson goes on to say that many of the successful innovations studied "are now struggling with how to get their ideas or practices out to a wider audience with integrity" (p. 43). In the article, Olson compliments Reading Recovery for its success in scaling-up, calling it a "well researched and consistent intervention . . . . The most successful reform networks," Olson claims, "are organized around powerful visions of teaching and learning." Reading Recovery is based on powerful visions and its design provides for renewal of teachers' knowledge and skills through continuing contact, regular institutes and conferences, through research and evaluation, and through a network of support. Our delivery systems and organization need constant scrutiny as the scale of operation changes.

In the summer of 1992, a committee representing the RRCNA membership met at Texas Woman's University to discuss the future of Reading Recovery. Their mission was to create a vision for the future that would be extended through discussion among teachers, teacher leaders, and administrators at all Reading Recovery sites in the ensuing year. The result of this consensus process may be summarized under four vision statements, each of which prompts action for the Council. Each statement is summarized, along with examples of some of the ideas envisioned for each.

1. Sustain the Quality

Our first objective is to make sure Reading Recovery is delivered to children in a high quality way. We can achieve this goal by high quality training and visible accountability. The experience of the National Alliance for Restructuring Education suggests, "Be clear about what you stand for. No one will rally to your flag if you do not have compelling ideas and represent a set of values with which site partners and nonsite partners can identify" (quoted in Olson). The standard of Reading Recovery is high and its definition is clear: we teach individual, low achieving young children to become independent readers and writers. Reading Recovery is an individual tutorial program for children in their first or second year of school. Teachers are trained in an intensive yearlong program and participate in continuing contact throughout their tenure in the program. Training and continuing contact provide a unique learning context, which we call *talking while observing*, made possible by extensive use of a one-way glass screen. Sustaining quality involves challenges. Deliberations of the visioning process suggest that as we grow larger, we must find new and better ways of enhancing communications among our network of teachers and teacher leaders who are widely distributed geographically.

2. Move to National Scale

One of the Council's top priorities will be to study the implementation of Reading Recovery and design the system that will be needed to accomplish the scaling-up challenge. Research on the process of implementation and accompanying cost-benefit studies will reveal ways for Reading Recovery to become more efficient and deliverable without losing quality. In addition, every innovative effort must develop in ways that serve *vintage* sites. When Reading Recovery is no longer new but traditional, there must be ways to continue growth and change.

3. Broaden the Vision

The preschool, primary, and elementary years are critical periods in children's education and thus, particularly important to our society. Good first teaching in classrooms is essential so that all children have massive opportunities to read and write for real purposes. There is growing recognition that teachers and administrators need the support of research based training and development over time. Although a large number of educational *consultants, quick-fix* programs, and entrepreneurial organizations exist, school officials report difficulty in identifying and acquiring the type and variety of help they need in the various stages of the change process. Most settle for piecemeal efforts without comprehensive planning and long-term vision.

Sometimes classroom teachers and administrators turn to Reading Recovery because of its success record and strong staff development design. However, Reading Recovery was intended for extra help, not classroom education. We do not advise direct transfer of procedures for individual, assistance to classroom work, but Reading Recovery does have something to offer general education, including:

- A powerful demonstration that all children can become independent readers and writers,
- A view of children as constructive learners,
- Demonstration of the value of sensitive observation of children's reading and writing behaviors,
- Examples of effective teaching and learning interactions,
- An example of a dynamic and ongoing professional development for teachers, and
- An example of systemic approach to learning and change.

Based on what we have learned from Reading Recovery, Ohio State University has initiated a professional development project to support classroom teaching. Other universities involved in the effort are California State University, San Bernardino; Lesley College of Cambridge; and the University of Chicago. Other regions, for example, the State of Arkansas, have initiated similar efforts. These literacy initiatives are designed to provide support for classroom teachers in schools that have implemented Reading Recovery. The Council will work to support and coordinate these efforts so that many resources will be available to school personnel.

The Early Literacy Learning Initiative offers long-term relationships with schools. The goal is to restructure primary literacy education so that children are provided massive opportunities to read and write beginning with their entry to school. Ohio State University has designed a training program for literacy coordinators who teach children in classrooms or groups and offer support to other primary teachers at a school site. The project incorporates the following characteristics:

- Long-term collaboration to assure renewal and problem-solving over time,
- Tested curricular approaches,
- Dynamic and intensive teacher development,
- Assessment of effectiveness that is integral to the project and involves participants,
- The development of local expertise and leadership to institutionalize change, and
- Provision of a learning network that would continue to be a source of advice and professional development as well as connecting schools and districts with each other.

4. Influence Teacher Education Through Inquiry

Reading Recovery staff development offers a powerful model for helping teachers construct knowledge. Through participation in the program, teachers become acute observers; experiencing the heart of the inquiry process. In a report from Australia titled, *Changing Lives* (Power & Sawkins, 1992, University of New England—Northern Rivers, Australia), the researchers investigated Reading Recovery for one year in New South Wales, Australia. By the title, they not only meant the changes in lives of children, but also in the lives of teachers. In Reading Recovery, teachers become leaders, and leaders can change the current scene. Again, quoting the *Education Week* article, "The single most important variable is leadership, 'strong, like-minded people who are willing to stay the course.' We have never succeeded in any measure where good leadership is lacking." In Reading Recovery, teachers are there to advocate for children and to lead change. They do this by continuing to learn. Teacher education must be there to support them and all teachers who inquire into the learning of children.

Summary

It is easy and exciting to generate vision statements and goals and they are necessary to guide our efforts. The hard part, though, is the day-to-day work needed to put them into action. Reading Recovery has a cadre of professionals, children, and parents who know that hard work firsthand. Our success is the product of the work they do every moment of the thirty-minute lesson and every moment of professional opportunity. Through strengthened partnerships to support our work, the next decade will see these four visions—and others—made real.

Finally, on behalf of the Council, I invite researchers in schools, universities, and other arenas to share their inquiry with our membership. The interests of the membership are broad ranging; they want to learn about learning and teaching and they invite challenging ideas. We look to this journal to assist us.

THE ROLE OF TALK DURING INTERACTIVE STORYBOOK READING IN A KINDERGARTEN CLASSROOM

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LITERACY,
TEACHING AND
LEARNING

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Background of the Study

TALK DURING STORYBOOK READING EVENTS SCAFFOLDS CHILDREN'S LEARNING about written language. As they interact with adults while reading, children construct meaning by linking life to text and text to life (Cochran-Smith, 1984) in addition to developing key knowledge and an expanded vocabulary (Ninio & Bruner, 1978; Snow & Goldfield, 1983). This knowledge provides a base for school-based literacy knowledge (Wells, 1986).

Reading the same stories on multiple occasions has also been shown to have a positive influence on literacy learning. Yaden (1988) reported that the kinds of questions asked by his kindergarten-aged son changed over the six readings of the same storybook. Questions about the meaning of words did not occur until the middle readings of the book. Martinez and Roser (1985) discovered that four year-old children's responses had greater understanding as they listened to the same story, and this was true whether they heard the story at home or in school. Pappas and Brown (1987) found that children's retellings more closely approximated the language of the storybook with additional storybook readings. They concluded that hearing and reading stories more than once helped children learn story discourse patterns.

Not all children have rich reading experiences prior to school entry. Studies of lap-like storybook reading in a school setting indicated that such experiences are especially important in supporting the literacy learning of children who have had limited opportunities to hear stories read aloud prior to school entry (Martinez, Cheney, McBroom, Hemmeter, & Teale, 1988; Morrow, 1988; Strong, 1988; Wells, 1986). Morrow investigated the impact of revisiting the same storybook on young children's responses. She found that those children who revisited the same story during interactive storybook reading responded in qualitatively different ways from children who had heard the story read to them a single time.

In a kindergarten program for at-risk children, Martinez, Cheney, McBroom, Hemmeter, and Teale (1988) read the same stories frequently so that familiarity with stories would support children's own emergent readings. Strong (1988) documented the literacy learning of a small group of first grade boys who had been identified as at-risk of reading failure. According to Strong, talk during storybook readings indicated that children were attending to both the literary elements of the story and the details of print.

This study builds on previous research by describing and analyzing the talk of a group of urban, kindergarten children as they engaged in a series of interactive storybook reading events. The study was designed to answer the following questions: (a) What is the nature of talk during multiple storybook reading events? and (b) Is there a relationship between the genre of a storybook and the nature of talk?

Methodology

This study involved a yearlong investigation of a kindergarten classroom. Children who had been identified as at-risk of school failure based on a standardized test were given the opportunity to participate in a federally funded kindergarten program which was based on a holistic reading and writing curriculum.

Data Collection

Sources of data included daily field notes, audiotapes of all read-aloud events, and videotapes of all interactive storybook reading events for a six-week period in the spring of the year.

Data Analysis

Transcripts from 14 interactive storybook reading events centering around the reading of two teacher-selected stories were analyzed. Seven transcripts document the interactive storybook readings of the predictable pattern book, *How Many Bugs in a Box?* (Carter, 1988) and seven transcripts record the initial reading and revisiting of the folktale, *The Three Little Pigs* (Galdone, 1970). One hundred thirty-seven pages of transcription (32 pages of transcription from *How Many Bugs in a Box?* and 105 pages of transcription for storybook readings of *The Three Little Pigs*) were analyzed to determine terms of the nature of teacher and child talk during these interactive storybook reading events.

Data were analyzed in two ways. First, the conversations during the first, middle (fourth), and last transcripts of both the predictable pattern book and the folktale were analyzed for the function of talk and whether the speaker was the teacher or a child. Nine categories emerged from the analyses. They were:

1. Talk about the reading process/mechanics of reading;
2. Talk about literacy concepts such as story structure, plot, theme, book language, book formats;
3. Talk that indicated an affective response to the story such as "Oooooh" or "That's scary;"
4. Talk that seemed to indicate a child's intellectual search (Tizard & Hughes, 1984). This category included questioning about how a flap worked, requesting information relative to something within the story, linking the story to one's own life experiences, and making links to other books and rhymes such as a child who heard the word *merry* and began to recite "Mary had a little lamb;"
5. Child and teacher talk that centered around management. This category included directions given by the teacher and children and comments by children about not being able to see the book;
6. Talk that indicated a confirmation of a preceding response such as when the speaker agreed with a remark. This category also included the teacher's invitation to confirm a prediction by saying, "Let's read and see what happens;"
7. Talk that involved predicting something, usually an event in the story;
8. Talk in which the primary purpose was to inform. This usually involved teacher talk, either as a response to the children's questions of intellectual search or as an explanation of something that she felt children might not know; and
9. Talk in which the speaker was seeking clarification. Examples of teacher and child talk are included later in this article.

Procedures for Coding Topics

Transcriptions of talk during the interactive storybook readings of these two books were also analyzed in terms of the topics that emerged within individual readings as well as topics that reappeared across readings of the same storybook. The topics were defined as at least four exchanges among conversational partners (i.e., turns) about a particular subject. The topics were identified as either child initiated or teacher initiated. For example, in the first reading of *How Many Bugs in a Box?*, a child commented that she saw the letter *b*. Her comment led to a discussion of words that begin with *b*. That discussion was classified as a child initiated discussion of print. In the same interactive storybook reading, the teacher read a sign on a box on the last page which said, "Open if you dare," and then asked the children, "Do we dare?"

Because the teacher and children engaged in this game-like interaction during every reading, it was classified as a teacher initiated theme that developed across readings.

Results

Categories of Talk in the Predictable Pattern Book

Results of the analysis of talk during the first, middle, and last readings of each of the two storybooks according to nine categories of talk are represented in Tables 1 and 2. The results for each of the nine categories are expressed as percentages of the total number of coded comments for that transcript. A percentage is given for both the teacher and child talk coded for a particular category. The number of teacher and child utterances was then added to determine the total percentage of talk related to a specific category. The proportion of teacher to child talk is represented by the percentages in the last columns of Tables 1 and 2.

Analysis of the transcripts indicates that in 13 of the 14 storybook readings, children had more conversational turns than the teacher (i.e., the percentage of coded child comments was greater than the percentage of coded teacher comments). The one exception occurred during the fourth reading of *How Many Bugs in a Box?* During that reading, the teacher had more conversational turns than did the children—a ratio of 49 percent to 51 percent (child to teacher talk). In that particular reading, the teacher directed children to watch her point to the text as she read and pointed out the label for and function of the question mark.

Utterances classified in Category III (affective utterances) reflect response to story meaning, derived from either the text or illustrations. In the first and third readings of *How Many Bugs in a Box?,* Category III (affective response) had the highest percentage of total utterances for both students (40 percent) and teacher (21 percent). In all three transcripts, most child talk occurred in Category III. The pattern for teacher talk was different. During the first and middle readings of *How Many Bugs in a Box?,* the greatest percentage of teacher utterances was in Category I (attention to print and the mechanics of reading).

Categories of Talk in the Folktale

Figures 1 and 2 depict the ratio of teacher to child talk across the three readings of each of the two storybooks. In both the multiple readings of *How Many Bugs in a Box?* and *The Three Little Pigs,* the proportion of teacher to child talk is almost equal in the middle (fourth) readings. The first and last transcripts of each storybook contain a greater percentage of talk by children. According to the data presented in Table 1, the middle readings of both the predictable pattern book and the folktale were also the readings in which the greatest amount of talk about the mechanics of reading occurred (Category I).

Of the total number of utterances, the highest proportion (44 or 28 percent) for the first reading of *The Three Little Pigs* occurred in Category VI (confirmation). For example, the teacher confirmed a child's prediction by saying, "Terry says, 'Here comes the third little pig.' I think she's right." A child confirmed his own prediction that the wolf would not eat the pig when he was in the apple tree by saying, "I told you he wouldn't." Most of the utterances were confirmations about their predictions of the outcome of events in the story.

The greatest percentage of talk (35 percent) in the last reading of *The Three Little Pigs* occurred in Category IV (intellectual search). Ten of the 30 utterances made by children were comments in which the child linked something in *The Three Little Pigs* to another book or rhyme. For example, they linked the donkey with a load of sticks on his back to the donkey in *Tingalayo.*

Table 1

Number and Percent of Child and Teacher Turns in Each Category of How Many Bugs in a Box?

CATEGORY	I	II	III	IV	V	VI	VII	VIII	IX	TOTAL
First Reading										
TEACHER	11	2	1	3	3	1	-	4	-	25
CHILD	2	7	24	2	3	-	-	-	-	38
TOTAL	13	9	25	5	6	1	0	4	0	63
TEACHER	17%	3%	2%	5%	5%	2%	0%	6%	0%	40%
CHILD	3%	11%	38%	3%	5%	0%	0%	0%	0%	60%
TOTAL	21%	14%	40%	8%	10%	2%	0%	6%	0%	100%
Middle Reading										
TEACHER	9	0	0	1	4	2	0	3	-	19
CHILD	4	0	7	0	0	1	2	4	-	18
TOTAL	13	0	7	1	4	3	2	7	0	37
TEACHER	24%	0%	0%	3%	11%	5%	0%	8%	0%	51%
CHILD	11%	0%	19%	0%	0%	3%	5%	11%	0%	49%
TOTAL	35%	0%	19%	3%	11%	8%	5%	19%	0%	100%
Last Reading										
TEACHER	0	1	2	0	3	3	0	0	1	10
CHILD	4	2	5	3	1	2	6	0	0	25
TOTAL	4	3	7	3	4	5	6	0	1	35
TEACHER	0%	3%	6%	0%	9%	9%	0%	0%	3%	30%
CHILD	12%	6%	15%	9%	3%	6%	18%	0%	0%	70%
TOTAL	12%	9%	21%	9%	12%	15%	18%	0%	3%	100%
Total Readings										
TEACHER	20	3	3	4	10	6	0	7	1	54
CHILD	10	9	36	5	4	3	8	4	0	79
TOTAL	30	12	39	9	14	9	8	11	1	133
TEACHER	15%	2%	2%	3%	8%	5%	0%	5%	1%	41%
CHILD	8%	7%	27%	4%	3%	2%	6%	3%	0%	59%
TOTAL	23%	9%	29%	7%	11%	7%	6%	8%	1%	100%

Note. I = Forms and functions of print
II = Literacy response
III = Affective responses
IV = Intellectual search
V = Management
VI = Confirmation of a previous response
VII = Prediction
VIII = Talk to inform
IX = Clarification

Table 2

Number and Percent of Child and Teacher Turns in Each Category of The Three Little Pigs

CATEGORY	I	II	III	IV	V	VI	VII	VIII	IX	TOTAL
First Reading										
TEACHER	5	10	2	7	6	16	6	6	0	58
CHILD	2	2	24	16	2	25	27	0	0	101
TOTAL	7	12	26	23	8	44	33	6	0	159
TEACHER	-	6%	1%	-	4%	0%	10%	4%	0%	36%
CHILD	-	1%	15%	10%	-	0%	-	-	-	64%
TOTAL	-	8%	16%	14%	5%	0%	26%	4%	0%	100%
Middle Reading										
TEACHER	36	20	3	9	11	39	1	15	23	158
CHILD	41	54	10	31	10	13	11	11	3	184
TOTAL	77	74	13	40	21	52	12	27	26	342
TEACHER	11%	6%	1%	3%	3%	0%	11%	5%	7%	46%
CHILD	12%	16%	3%	9%	3%	3%	4%	3%	1%	54%
TOTAL	23%	22%	4%	12%	6%	4%	15%	8%	8%	100%
Last Reading										
TEACHER	5	1	2	11	6	13	1	1	1	41
CHILD	4	10	13	30	11	3	5	1	0	77
TOTAL	9	11	15	41	17	16	6	2	1	118
TEACHER	4%	1%	2%	9%	5%	1%	11%	1%	1%	35%
CHILD	-	8%	11%	25%	9%	4%	3%	4%	1%	65%
TOTAL	5%	9%	13%	35%	14%	5%	14%	5%	2%	100%
Total Readings										
TEACHER	46	31	7	27	23	68	8	23	24	257
CHILD	47	66	47	77	23	44	43	12	5	362
TOTAL	93	97	54	104	46	112	51	35	27	619
TEACHER	7%	5%	1%	4%	4%	11%	1%	4%	4%	42%
CHILD	8%	11%	8%	12%	-	7%	7%	2%	0%	58%
TOTAL	15%	16%	9%	17%	7%	18%	8%	6%	4%	100%

Note. I = Forms and functions of print
II = Literacy response
III = Affective responses
IV = Intellectual search
V = Management
VI = Confirmation of a previous response
VII = Prediction
VIII = Talk to inform
IX = Clarification

Comparison of Talk Across Genres

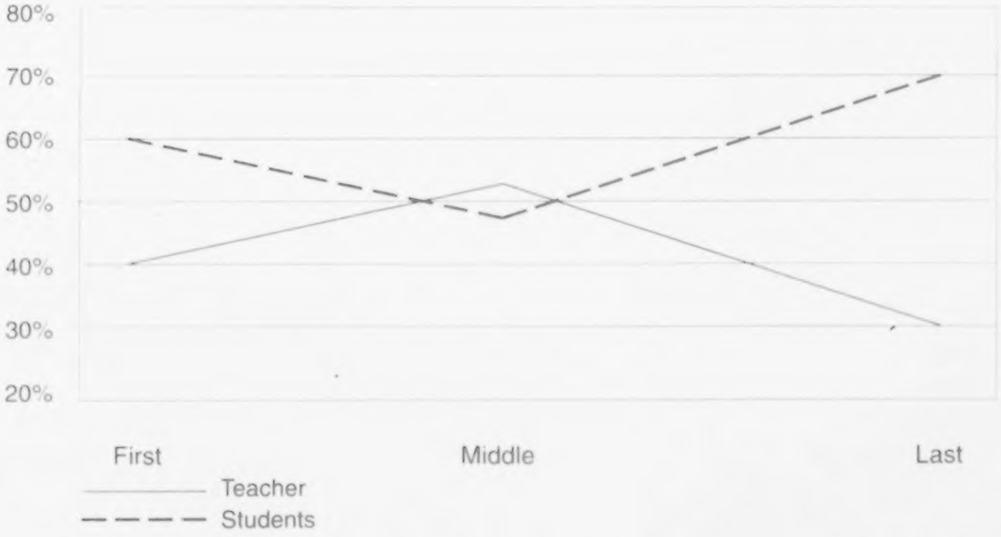
Data presented in Tables 1 and 2 illustrate that the ratio of teacher to child talk was almost identical across the first, middle (fourth), and last readings of each of the two storybooks. The first and last transcripts of each storybook reading contain a greater percentage of conversational turns by children. The middle readings of both storybooks were also the readings in which the greatest amount of talk about the mechanics of reading occurred (Category I). Figures 1 and 2 are graphic representations of teacher and child conversational turns in the first, middle (fourth), and last readings of the two storybooks.

Topics of Discussion in the Predictable Pattern Book

Analysis of the talk in the seven readings of the predictable pattern book, *How Many Bugs in a Box?*, represented six categories: (a) illustration, (b) print, (c) game-like routines, (d) links to life (Cochran-Smith, 1984), (e) links to books, and (f) affective response. The number of topics initiated by the teacher and children was approximately the same. The teacher initiated 14, or 54 percent, of the topics while the children initiated 12, or 46 percent, of the discussions about a topic. Table 3 displays the number and type of topics generated by the teacher and children in each of the seven storybook readings of *How Many Bugs in a Box?*

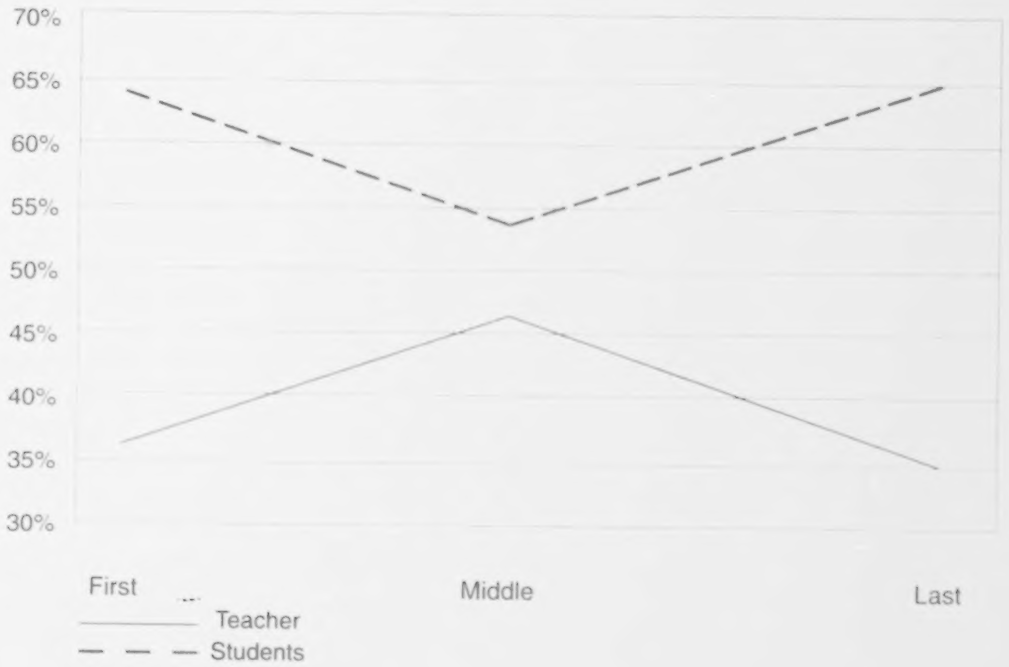
Miss P chose to highlight *How Many Bugs in a Box?* in her read-aloud program because the repetitive pattern and text layout supported children as they began to make connections between the oral language of the storybook reading and the print on the page. Analysis of her talk during the seven storybook readings of *How Many Bugs in a Box?* shows that Miss P initiated topics that drew attention to print in four of the seven storybook readings.

Figure 1.* The ratio of child to teacher conversational turns in the first, middle, and last storybook readings of *How Many Bugs in a Box?



Although her primary purpose in selecting this book was to draw children's attention to print, she also began discussions about other topics. She pointed out how Carter (1988) used his knowledge of the real world when he created the bugs in his illustrations. For example, the frog bugs had long sticky tongues so they could catch flies just like real frogs do. She also began the game-like routine that developed around whether or not they should dare to open the box that had saw bugs in it.

Figure 2. **The ratio of child to teacher conversational turns in the first, middle, and last storybook readings of *The Three Little Pigs.***



The only topic that emerged in every reading was the game-like routine initiated by the teacher in the first reading of the storybook. Following is the transcription from the first reading of the book. The text from the book is in uppercase letters.

Miss P: Listen to this page. Listen. HOW MANY BUGS ARE IN THE WOODEN BOX? Oh, oh! There's a sign that says, OPEN IF YOU DARE. Do we dare open it?

Children: No!

Miss P: Oh, let's dare. Let's dare.

Roy: No!

Children: [Loud laughter]

Miss P: (Miss P has opened the flap.) It says, TEN SAW BUGS. CAREFUL. DON'T LET THEM OUT! Let's close it up so they don't get out.

Children: [Loud laughter]

Child: Read that again.

Analysis of the transcripts shows that the last two times Miss P read *How Many Bugs in a Box?*, the only lengthy conversation involved this game-like routine that revolved around the last illustration in the book.

Table 3
Frequency of Child and Teacher Initiated Topics Across Seven Readings of How Many Bugs in a Box?

Topic	Number of Storybook Reading Events													
	1st		2nd		3rd		4th		5th		6th		7th	
	T	C	T	C	T	C	T	C	T	C	T	C	T	C
Illustrations	–	1	1	2	–	1	–	–	–	2	–	–	–	–
Print	–	–	1	–	1	–	1	–	1	–	–	–	–	–
Game	1	–	–	1	1	–	1	–	–	1	1	–	1	–
Link to Life	–	–	1	–	2	1	–	–	–	–	–	–	–	–
Link to Books	–	–	–	–	1	–	–	–	–	–	–	–	–	–
Affective Response	–	–	–	1	–	1	–	–	–	–	–	–	–	–

Note. T = Teacher; C = Child

Topics of Discussion in the Folktale

During the seven interactive storybook readings of Galdone's *The Three Little Pigs*, children initiated the greatest number of conversations. They started 77 percent of the topics that were discussed. Except for the last reading of *The Three Little Pigs*, children also initiated the majority of topics the class talked about each time the story was read. For example, children began a discussion around the topic of building materials. They discussed why they thought a brick house would be more sturdy than a straw house (link to life). They also wondered about what it meant *to seek their fortune* (literacy) and looked through books to see if the titles of books were always located in the same place (print/reading). The number and type of topics initiated by the teacher and children during the interactive storybook readings of *The Three Little Pigs* are displayed in Table 4.

Most of the topics discussed during the readings of *The Three Little Pigs* fell into the category labeled *literacy*. Children talked about the characteristics of the pigs and wolf, predicted the plot, and interpreted the illustrations. Although print was mentioned during short interactions in all seven readings, it did not become the focus of extended discussions until the fourth and fifth readings when children initiated a discussion of the similarity in the spelling patterns of *huff* and *puff*.

The following is an analysis of the talk surrounding the reading of the first page of Galdone's (1970), *The Three Little Pigs*. It illustrates the way children constructed different meanings across multiple readings of the first page of the book. Galdone set the plot for the story on the first page when the mother sow sends her children off to seek their fortune. In order to set the stage for the story, the teacher drew attention to the illustration of the mother sow crying as her children leave home. The text from the story is indicated with upper case letters.

Table 4

Frequency of Child and Teacher Initiated Topics Across Seven Readings of The Three Little Pigs

Topic	Number of Storybook Reading Events													
	1st		2nd		3rd		4th		5th		6th		7th	
	T	C	T	C	T	C	T	C	T	C	T	C	T	C
Literacy	3	1	–	2	1	9	3	8	1	2	–	2	–	2
Print/Reading	–	–	–	–	1	1	1	3	1	4	–	–	–	–
Link to Life	–	2	–	–	–	1	1	1	–	1	–	2	–	1
Management	–	–	–	2	–	–	–	–	–	–	–	–	2	–

Note. T = Teacher; C = Child

Miss P: ONCE UPON A TIME THERE WAS AN OLD SOW WITH THREE LITTLE PIGS. SHE HAD NO MONEY TO KEEP THEM, SO SHE SENT THEM OFF TO SEEK THEIR FORTUNE. Why is she crying?

Nate: She don't got no money.

Miss P: She doesn't have any money. Why else is she crying?

Jordan: Because the piggies are going away.

Miss P: Because her children, her pigs, are going away. She's sending them away and she's very sad. She doesn't want them to leave.

Phinney: But they're coming back!

Sara: My mom cryin' cause she got no money.

After this initial teacher initiated discussion, nothing more was said about the reason for the pigs leaving home nor was any mention made of the phrase, *to seek their fortune*, until the fifth read-aloud event. Instead, children paid attention to the phrase Galdone used to begin the story, *Once upon a time*. They linked the words used to begin this story to the opening phrases in other folktales. The following excerpt from the first storybook reading illustrates the way children made links between this tale and others they had heard. The conversation begins when one of the children, Phinney, says, "Once upon a time."

Phinney: Once upon a time.

Miss P: You're right! That's exactly how it starts. That's exactly how it starts.

All Children: (All children are talking at once and begin to get up to get other folktales they had read by Galdone.)

Miss P: Chrissy, Chrissy, bring me the Galdone book (*The Three Bears*). Mitchell, hand me the Galdone one (*The Three Billy Goats Gruff*). Thank you. Now.

Peter: And another one.

Miss P: Thank you, Chrissy. Now, somebody said that this starts 'Once upon a time,' also. (She begins to read the first page of *The Three Billy Goats Gruff* by Galdone.)

But in the fifth reading, one of the children, Phinney, became intrigued with the meaning of the phrase *to seek their fortune*. The following is an excerpt of that conversation.

Phinney: What does it mean—seek their fortune?

Miss P: To seek their fortune means she sent them off to see if they could make a living; if they would figure out a way to live.

Phinney: [Unintelligible]

Miss P: To find a house to live in.

Phinney: I would, I would still stay here [excited, emotional tone of voice]

Terry: That's their house.

Miss P: I'll bet that is the mother sow's house.

Terry: Why they have to leave?

Miss P: Well, because she didn't have any money to keep them. That means she doesn't have enough money to buy food for them.

The discussion continued with the children talking about what they would pack in a bag if they were going off to seek their fortune. During the sixth reading, Phinney asked again about the meaning of the phrase to seek their fortune.

Phinney: What does that mean?

Miss P: What did we say that meant?

Jordan: She couldn't keep them.

Miss P: She couldn't keep them. She didn't have enough money to get food for them so she sent them off to seek their fortune. It means she told them to go ahead and go out and see if they could find a way to live on their own.

Jordan: I'm never leavin'.

Child 2: I'm never movin'.

Miss P: You're never moving? Wow! Your mom and dad will be surprised. Will you live there forever and ever?

Phinney: I'm movin'.

Miss P: [To child 2] How about when you're grown up?

Child 2: I'm gonna be movin'.

Phinney: I'm gonna get me a car!

Miss P: You're gonna get a car? You know what, Phinney? You're gonna be like the three little pigs. You're going to go out and find a way to make some money by yourself.

Discussion

The Role of Talk in How Many Bugs in a Box?

Talk served different purposes for the children and teacher during the seven readings of *How Many Bugs in a Box?* The category with the most child talk in the predictably patterned book, *How Many Bugs in a Box?*, was Category III of Table 1 (affective response). There was a close match between the teacher's talk and her purpose for selecting this book. The category with the most teacher talk across the three storybook readings was Category I (attention to print). The teacher had stated that she selected *How Many Bugs in a Box?* because the simple repetitive pattern of the text and large print enabled her to demonstrate the early reading strategies of left-to-right directionality, return sweep, and word-by-word matching. The language pattern, which was in the form of a question, gave her an opportunity to introduce children to the question mark as a form of punctuation.

The teacher's purpose for choosing this book is also reflected in the kinds of topics she chose to bring up for discussion. Miss P initiated discussions about print related topics in four of the seven storybook readings of *How Many Bugs in a Box?* Three of those discussions focused on the identification and purpose of the question mark.

On the other hand, children usually initiated discussions about topics that were related to illustrations in the book. They wanted to know why the fleas moved when the flap opened and why frogs ate flies. The only topic that emerged in every reading of the story was the game-like routine initiated by the teacher in the first reading of the storybook. Her playful interaction developed into a ritual that was included in every interactive storybook reading of *How Many Bugs in a Box?* just like parents and children develop rituals around the readings of a particular storybook at home. The children reacted effectively to the opening of each flap, sometimes anticipating what they would see with a comment like, "It's gonna be scary!"

Role of Talk in The Three Little Pigs

The teacher chose *How Many Bugs in a Box?* as a *text to teach*, but she chose *The Three Little Pigs* as a *text to stretch* children's literary understandings (Huck, 1983). Most of the conversations that evolved during the seven interactive storybook readings of *The Three Little Pigs* focused on making sense of the story either by talking about the plot and characters or linking it to other tales they had heard.

The data also indicate that children focused their attention on different aspects of the story during the seven interactive storybook readings. For example, print captured their interest during the middle readings of the storybook and book language intrigued them in the later readings. The shift in talk during these storybook readings followed the same patterns described by Martinez and Roser (1985), Morrow (1988), and Yaden (1988) in their studies. These authors also found that talk during multiple readings of the same storybook changed as children continued to construct new understandings of the story.

Comparison of Patterns and Content of Talk Across Storybook Readings From Two Genres

The data presented in Figures 1 and 2 and Tables 1 and 2 indicate identical changes in patterns of teacher/child turn-taking across storybook readings. The same pattern emerged in multiple readings of books from two diverse genres. Children had a greater number of conversational turns in the first and last readings of both *How Many Bugs in a Box?*, a book with a predictable pattern, and *The Three Little Pigs*, a folktale. The number of conversational turns for the teacher and children are more nearly equal in the middle (fourth) readings of both books.

The content of talk may have played a role in the amount of teacher and child talk for each storybook reading. Talk during the first and last readings of both storybooks focused on the story itself. For example, in the first reading of *The Three Little Pigs*, children predicted the plot. In the last reading, they thought of their own lives in terms of the story, talking about the stance they would take if they were asked to leave home. The also talked about the sensibility of building homes from straw. During the first and last readings of *How Many Bugs in a Box?*, children delighted in and talked about what kinds of bugs Carter put in each of the boxes.

In contrast, talk during the middle reading of each storybook focused more intensively on print. Much of the print-related talk during the fourth (middle) read-aloud of *The Three Little Pigs* was related to a discussion of the words huff and puff. During the third storybook reading, the teacher had written the words *huff*, *puff*, and *Blow your house* in enlarged print on a piece of chart paper. She printed the text so that the word puff was written directly under the word huff. Every time those words appeared in the story, she would point to the words on the chart and the children would read with her. Her choice of text, the layout of the text on the chart paper, and the drawing of the class's attention to the print by having the children engage in a shared reading of that bit of text may all have contributed to the children noticing the similarity and differences in the writing of the words huff and puff.

During these conversations about print, there tended to be a shift to more traditional teacher-student interactional patterns, similar to that described by Mehan (1979). For example, when Miss P directed children's attention to the question mark, she asked them what it meant and had a predetermined answer in mind. When the children heard the word *merry* in *The Three Little Pigs*, she wrote it down and then compared it to the girl's name, Mary, showing them how the two were different.

The analysis of the nature of talk during the reading of the first page of *The Three Little Pigs* also demonstrates that multiple readings allow children to attend to different aspects of the text. In these readings, children first made intertextual ties based on book language and patterns of three in other folktales with which there were familiar. Only then did they notice the more unfamiliar language that appeared on that page (to seek their fortune), inquire about its meaning, and respond to its meaning in terms of their own lives.

Conclusion

The interactive storybook readings described in this study were part of a print-rich instructional program this kindergarten teacher developed to foster literacy learning of her at-risk students. Just as an adult scaffolds a child's learning during lap reading experiences at home, Miss P extended her students' understandings of written language—from the discourse structure of narratives to the details of print—as they conversed during storybook reading events.

Miss P also read the same story on multiple occasions. The variety of talk and changing student-teacher interactional patterns across readings suggest that revisiting storybooks may play an important function in literacy learning both in and out of school. The opportunity to hear the same story more than one time created an opportunity for students to respond to the story in multiple ways and at multiple levels. They internalized the story structure and language patterns of both books, reflected on links between the story being read and others they had heard, and made links between the storybooks and their own experiences.

Most of the more lengthy topics of discussion were initiated by children as they made sense of the story or the world of print. For example, Phinney's inquiry about the meaning of *to seek your fortune* in the fifth reading of *The Three Little Pigs* led to long discussions in which Phinney and the other children related the experiences of the pigs leaving home to their own lives. Jordan's discovery that *huff* and *puff* ended in the same letters developed into a discussion of print. Talk surrounding storybook readings in this classroom promoted the development of literacy by encouraging the development of literate thinking.

References

Clay, M. (1985). *The early detection of reading difficulties* (3rd ed.). Portsmouth, NH: Heinemann.

Cochran-Smith, M. (1984). *The making of a reader*. Norwood, NJ: Ablex.

Huck, C. S. (1983). *Reading Recovery of failing first graders: Research proposal to NIE*. Columbus: The Ohio State University.

Martinez, M., Cheney, M., McBrook, C., Hemmeter, A., & Teale, W. (1988). *No risk kindergarten literacy environments for at risk children*. Paper presented at the International Reading Conference, Toronto, Canada.

Martinez, M., & Roser, N. (1985). Read it again: The value of repeated reading during storytime. *The Reading Teacher, 38*, 782-786.

Meek, M. (1982). *Learning to read*. London: The Bodley Head.

Mehan, H. (1979). *Learning lessons: Social organization in the classroom*. Cambridge: Harvard University Press.

Morrow, L. (1988). Young children's responses to one-to-one story readings in school settings. *Reading Research Quarterly, 23*, 89-107.

Ninio, A., & Bruner, J. (1978). The achievement and antecedents of labeling. *Journal of Child Language, 5*, 1-15.

Pappas, C., & Brown, E. (1987). Learning to read by reading: Learning how to extend the functional potential of language. *Research in the Teaching of English, 21*(2), 160-177.

Snow, C., & Goldfield, B. (1983). Turn the page please: Situation- specific language acquisition. *Journal of Child Language, 10*, 551-569.

Strong, E. (1988). *Nurturing early literacy: A literature based program for at-risk first graders.* Unpublished doctoral dissertation. Columbus: The Ohio State University.

Tizard, B., & Hughes, M. (1984). *Young children learning*. Cambridge: Harvard University Press.

Wells, G. (1986). *The meaning makers: Children learning language and using language to learn*. Portsmouth, NH: Heinemann.

Yaden, D. (1988). Understanding stories through repeated read-alouds: How many does it take? *The Reading Teacher, 41*, 556-560.

Children's Literature

Carter, D. (1988). *How Many Bugs in a Box?* New York: Simon and Schuster.

Galdone, P. (1970). *The Three Little Pigs*. New York: Clarion Books.

Galdone, P. (1972). *The Three Bears*. New York: Clarion Books.

Galdone, P. (1972). *The Three Billy Goats Gruff*. New York: Clarion Books.

Raffi. (1988). *Tingalayo*. New York: Crown.

READING RECOVERY IN ENGLAND

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THIS PAPER PRESENTS FINDINGS FROM THE FIRST NATIONWIDE COLLECTION of Reading Recovery data ever carried out in England. As this is our first national monitoring, there were many issues which we urgently needed to explore to examine the implementation and to see what we could learn about ways to improve. This was our first opportunity to look at the overall effectiveness of the programme, to compare new and experienced teachers, to look at the profile of the children on entry and the levels they achieved at outcome, to look at different language groups, and to examine different measures of effectiveness. The data presented here represent very much a first look at that information to search for clues to some of the answers to these questions.

A Brief History of Reading Recovery in England

Before 1990, Reading Recovery had taken place in England only as a result of the efforts of individuals who had generally been trained in New Zealand and were visiting this country (e.g. Pluck, 1989). However, in 1989, one Head Teacher persuaded her county to send her to New Zealand to train as a tutor (teacher leader) and on her return in 1990, she immediately began to train teachers to implement the programme in Surrey schools. News of this venture spread and even before the professional reports appeared (Wright, 1992), there was considerable interest in the enterprise. As a result of this and with assistance from the Paul Hamlyn Foundation, in 1991, Professor Marie Clay was invited to bring a team of trainers and tutors over from New Zealand for two years to the Institute of Education at London University to lead courses for tutors and teachers there. In 1991, the New Zealand team trained the first cohort of seven tutors (teacher leaders) and 37 teachers while Jean Prance, our first English tutor, trained 12 teachers in Surrey.

This initiative was further consolidated when in 1992, approval was given by the Secretary of State for Education for a national pilot project to run from 1992-95, which the Institute of Education was asked to coordinate and oversee. In the event, the pilot project was funded from the GEST initiative (Grants for Education Support and Training) for which the Local Education Authorities (Boroughs or Counties) contribute 40 percent of the funds, which are then matched by 60 percent from central government. The GEST initiative under whose umbrella Reading Recovery fell was the Raising Standards in Inner Cities scheme designed to raise achievement in inner city schools. This restricted the pilot project to schools which fell within areas already designated as deprived urban areas.

Twenty metropolitan Local Education Authorities (Boroughs) took advantage of this scheme to send tutors to train and to set up their own Reading Recovery sites with training facilities. A further five were persuaded to join the training courses, supporting the programme without additional government funds. The urban areas included Bradford in West Yorkshire in the North, St. Helens on Merseyside in the North West of England, Birmingham and Wolverhampton in the Midlands, and twelve London boroughs. Thus, in the second cohort, 25 tutors and 100 teachers entered courses based at the Institute, with outreach centres in Sheffield to cover the north of England and Birmingham for the Midlands.

By September, 1993, there were 26 Reading Recovery sites around the country, stretching from Jersey in the south to Bradford in the north, running courses to train teachers. Two trainers of tutors were also trained in anticipation of our need to become self-sustaining. Also in 1993, the government sent two of Her Majesty's Inspectors of Schools to New Zealand to examine the scheme there; their report was highly favourable (OFSTED, 1993) and proved influential in persuading the government that since the New Zealand team would be leaving at the end of the academic year, some system needed to be established to monitor and coordinate the national enterprise. The Department for Education agreed to support a national coordination network consisting of the two trainers and two staff from the Institute of Education who had been involved with the training courses there. The National Network receives approximately 100,000 pounds per year from the Department for Education which covers a portion of the salaries of the four people involved, the travel costs incurred in making visits to every site, administrative costs, the cost of a one-week professional development course, the production of regular bulletins, national data-collection, and other costs. In 1994, the Department for Education agreed to extend this for one further year to cover the end of the pilot project, whose funding expired in April, 1995. Thus, just as it gets launched, the programme is threatened by uncertainty over its future. A current concern is the future funding for the implementation of Reading Recovery in the United Kingdom after 1995.

In 1993, before she returned to New Zealand (and then came on to Texas) Marie Clay analysed the data collected over the two years of the training programme consisting of the results obtained by the children taught by teachers-in-training, who had been trained by the New Zealand team, and she compiled a report noting the reactions of her team to their experiences of English teachers and schools. These impressions and the findings from these data formed the basis of a report which was presented to the tutors in February, 1994, at Tutor Development Week and which has informed our data collection subsequently.

The programme has thus expanded rapidly in England and from 1991-94 has been implemented by fairly inexperienced personnel. As we embarked on the school year in September, 1994, 26 of our tutors had one year of experience in the field and a minority, six, had two years of experience behind them; three were new to this role. At September, 1994, we had two trainers, 36 tutors in 29 training sites (local education authorities) including newly established centres in Wales and Northern Ireland.

The data to be presented are taken from our first national monitoring exercise which was carried out in July, 1994. We can confidently plan one further national monitoring in July, 1995, and although the future is uncertain we hope to be able to sustain it after that date.

Two cautionary notes:

(1) *Statistical analysis:* Because these data have been collected from a large sample and are based on the Observation Survey tests administered by teachers to children, there are gaps in the data and therefore the numbers included in every analysis vary slightly. While the total sample consisted of 3,131 children; where numbers are given there may be some slight variation across subtests.

(2) *Outcomes:* In our implementation, we recognise two possible outcomes to a Reading Recovery programme: a child may be successfully discontinued or referred. Two other possibilities are also recorded: when a child leaves the school and when a child has an incomplete programme because they have not received 20 weeks of instruction (we include the two weeks *in the known* in our computation of programme length). The definition of *successfully discontinued,* for research purposes, is the same as the operational definition used by the Reading Recovery teacher on the spot: (i) the child should have a secure literacy system, as shown by scores on the Observation Survey, in general a Book Level above 15 and a Writing Vocabulary greater than 30, together with some evidence of active processing and self-correction, and (ii) should be reading at the average level of the class. We have not so far used any other standardised tests to assess the child's reading level or the class average.

There is a widespread concern in England at the present time about levels of literacy achievement and while we cannot throw any light directly on this, we became aware that in many cases the average level of literacy of the class from which the Reading Recovery pupils were drawn was considerably lower than that represented by a Book Level of 15. We have tried to adhere to the first criterion for successful discontinuation, that the child should have a secure literacy system, but it is clear that this has been interpreted in different ways according to the grade of the class. This will be dealt with more fully in Section 2.5.

1. The Teachers

1.1 Teachers for the Reading Recovery training courses were recruited from fully qualified teachers who had sound experience of teaching at Infant (lower elementary) level and who could be released to teach four children every day. In the early years this meant that head teachers (principals) and deputy heads (assistant principals) were often the only members of a school staff who could find this time (or who thought they could). In fact, it became clear that they had many other conflicting demands on their time and we are now reluctant to train teachers who hold senior posts of responsibility.

Table 1
Numbers of Teachers and Children Involved in England 1990–93

	Number of teachers trained	Number included in 1994 survey	Number of children taught
1990	19 (in Surrey)	9 (2%)	63 (2%)
1991	49	24 (5%)	174 (6%)
1992	124	115 (24%)	778 (27%)
1993	330	328 (69%)	1886 (65%)
Total	522	476	2901

It is clear from these data in Table 1 that the majority of our informants are teachers in their year of training for Reading Recovery and they have provided data on the largest group of children. Almost 70 percent of the teachers were in training and they had provided data on 65 percent of our sample of almost 3,000 children.

One of our concerns has been to look for evidence that teachers become more effective with increased experience. We have looked for three kinds of evidence:

(a) pupil outcomes,
(b) length of programme, and
(c) numbers of children taught per year.

1.2 Do more experienced teachers achieve more successful outcomes?

Table 2 demonstrates the imbalance in the distribution both of teachers and pupils and the preponderance of inexperienced teachers and children taught by teachers still in training. It also suggests that as teachers become more experienced they become more successful at enabling pupils to achieve successful outcomes. Although the numbers of children and teachers involved are small, over 80 percent of the pupils taught by more experienced teachers achieved success; while less than 70 percent of those taught by teachers in training are successfully discontinued.

Table 2

Pupil Outcome x Year of Teacher Training, For Complete Programmes Only

	Teachers Trained				
Pupil outcome	1990	1991	1992	1993	Total
Successfully discontinued	**37** (88%)	**99** (83%)	**353** (7%)	**883** (68%)	**1372**
Referred	**5** (12%)	**20** (17%)	**130** (27%)	**418** (32%)	**573**
Total	42	119	483	1301	1945

These proportions are mirrored by the proportions referred who do not achieve the programme's goals: about 10 percent of those taught by the most experienced teachers are referred while 25-30 percent of those taught by less experienced teachers fail to reach a successful outcome.

1.3 Do experienced teachers get children through the programme at a faster rate?

Teaching an effective outcome is only desirable if it is not at the expense of a prolonged programme. Do experienced teachers manage to achieve these results without any increase in the length of the programme? Table 3 shows the length of programme (in weeks) for successfully discontinued children according to the year of teacher training.

Table 3

Average Length of Programme in Weeks x Year of Teacher Training

	Median	Mean	SD
trained 1990:	21 weeks	20	5
trained 1991:	20 weeks	20	8
trained 1992:	21 weeks	21	6
training 1993:	26 weeks	25	7

Note. In England we include the two weeks *in the known*.

This indicates that as teachers gain experience they also take less time to complete a child's programme. Although the trend is in the right direction, it is nevertheless worrying that the mean never falls below 20 weeks and the range, although it too narrows, remains high, especially in the training year.

1.4 How many children are reached by teachers as they get more experienced?

This decrease in length of programme with increased experience is reflected in the number of children reached, although this may also be affected by the number of programme places permitted. It is not always possible for schools to release teachers to offer four places on the programme at any one time; some schools have only been able to provide two or three places. Unfortunately, we omitted to collect information on the number of places available that year.

Table 4
Average Number of Children Receiving the Programme per Teacher x Year of Training

	Mode	Mean
trained 1990	6	7.00
trained 1991	8	7.25
trained 1992	8	6.70
training 1993	4	5.75

This demonstrates that as teachers become more experienced and move children faster through the programme, this enables them to get a faster throughput, so that more children can receive the programme. Thus, on three measures of teacher effectiveness our data show that as teachers get more experienced they become able to implement the programme more effectively. This is reassuring; the challenge now is to ensure that we can retain teachers in the programme so that more children can benefit from their improved performance.

2. The Children

2.1 Characteristics of the Sample

The data collected in 1994 provide the most extensive information yet available in England on the characteristics of pupils having difficulty with literacy and selected on that basis for Reading Recovery. Our sample of 3,131 children was made up of 1,955 boys (62 percent) and 1,176 girls (38 percent). Their mean age at entry to programme was 6 years, 1 month (*SD* = 3 months).

When the programme was first trialled in England, from 1990-1992, the target group of children was drawn from those aged 6:0 to 6:6 who were in what is called Year 2 classes. However, because of different policies on admission to school, children may enter school at any time between four and five and thus by six, some children will have had more than one year at school. The criteria for admission to the programme, that the child should have received one year at school and be aged over six years, identified two separate and only partially overlapping groups: those who had been in school for one year and those aged six. During their time in England, the New Zealand training team became aware of many demands that children in Year 1 should be admitted to Reading Recovery. From September, 1993, it was decided to lower the age of selection to 5:9 in order to include children in Year 1 classes who had already received one full year of schooling. Our age group for selection to the programme is now 5:9 through 6:3 and thus the sample children are drawn from two year groups:

Year 1 children (aged 5:9 – 5:11 in September)
Year 2 children (aged 6:0 – 6:11 in September)

Our Year 1 children are aged between 5:9 and 6:1 at entry to the programme and the Year 2 children are aged between 6:1 and 6:7. Year 2 children are usually selected at the start of the school year and the children who are selected later in the year after the first group have completed their programme are more likely to be Year 1 children. It is interesting that the lowering of the age of entry to 5:9 appears to have had a marked effect on the sample selected to receive the programme since over half of them are drawn from Year 1 classes this year:

Year 1:	1,823 children	*(59 percent)*	mean age 5:11	(*SD* 2 mo)
Year 2:	1,121 children	*(41 percent)*	mean age 6:4	(*SD* 3 mo)

The significance of grade level is that the early literacy experiences and the school curriculum in the two years differ considerably. The teachers' expectations about the children's literacy achievements will also be very different. The recently introduced National Tests are also taken by children at the end of Year 2. These provide a benchmark for literacy attainments and schools are generally concerned that their pupils should achieve at least average levels on these tests. This has made schools more receptive to the idea of early identification and intervention and may underlie the targeting of Year 1 children.

Because of different admissions policies, children will have had different lengths of school experience when they enter the programme. In England, the first class in school is called the Reception class; children may, depending on their term of entry which is affected by their date of birth and the school's admission policy, spend from one to three terms in Reception before moving into Year 1. Children selected for Reading Recovery will have had different amounts of schooling. For our sample this ranged from two to eight terms (Table 5).

Table 5
Number of Terms Completed at Start of Programme x Grade Level

	Number of terms of school completed at start of programme						
	2	3	4	5	6	7	8
Y1	**41** *(2 %)*	**1070** *(60 %)*	**424** *(24 %)*	**240***(13 %)*	**19** *(1 %)*	**1**	**0**
Y2	**12** *(1 %)*	**176** *(14 %)*	**532** *(44 %)*	**261***(21 %)*	**210** *(17%)*	**14** *(1 %)*	**16** *(1%)*

Over half the Year 1 children have had three terms in school at the start of the programme and a further quarter have had four terms. Over 40 percent of Year 2 children have had four terms in school (which is probably made up of three terms in Year 1 plus one term in the Reception class). But about 20 percent have had five and six terms schooling before they enter the programme, so many children in Year 2 have had well over a year at school and 20 percent have had two years of school experience when they start Reading Recovery.

2.2 Preschool Experience and Language Background

About ten percent of the sample had no preschool experience, about ten percent were in play groups, and about 80 percent were in nursery schools or nursery classes. This is higher than average for England but probably reflects the fact that the programme was running in inner city areas which generally have better preschool provision than suburban or rural areas or counties.

Given the areas in which the programme was sited, it is not surprising that the children were drawn from a range of ethnic backgrounds and 20 percent were bilingual, having a first language other than English. It is not possible without further investigation to be sure whether this proportion of bilingual speakers is fairly representative of the proportion of such children in the classes from which our sample was drawn. In some boroughs there were no bilingual children in the Reading Recovery programme whereas in others they constituted over half the sample.

2.3 Special Needs

Eighty-two children (2.6 percent of the whole sample) were noted as having a Statement of Special Educational Needs at the start of the programme, i.e. before the programme commenced. Since the process of issuing a statement of special needs is usually very protracted and can take up to a year, this suggests that these children had a significant learning disability which had been noticed early in their school (or even their preschool) career.

2.4 Entry and Exit Profiles of Children on the Observation Survey

This pattern of very low entry scores together with quite a wide variation seems to be typical of most of the populations of low achievers who have received Reading Recovery (Table 6): it is similar to the Australian and the Ohio samples. The entry scores are slightly lower than those of the first Surrey cohorts, reported in Wright (1992), who are our only other English reference point.

Table 6
Observation Survey Profiles for the Whole Sample

	Book Level	Concepts About Print	Hearing Sounds	Letter Identification	Word Test	Writing Vocabulary
Entry level (n = 2,900)						
mean	1.17	9.5	8.4	27.3	1.6	4.8
SD	1.6	3.7	8.1	15.7	2.2	5.2
Exit level (n = 1,900)						
mean	13.6	18.2	30.4	49.0	10.8	37.0
SD	4.5	3.5	7.3	7.3	3.7	15.0

However, the levels reached at the end of the programme for the whole sample, including those not successfully discontinued, while encouraging, are of limited value. More informative is the level reached for the successfully discontinued children, and here we need to examine the levels reached for different groups: those in Year 1 and Year 2, the bilingual speakers, and girls and boys.

2.5 *The Effect of Year Group on Progress in Reading Recovery*

Table 7
Outcome Scores on the Observation Survey for Successfully Discontinued Children in Year 1 and Year 2

	Book Level	Concepts About Print	Hearing Sounds	Letter Identification	Word Test	Writing Vocabulary
Year 1 (n = 645)						
mean	15.3	19.2	32.9	51.5	12.2	41.9
SD	2.0	2.6	3.9	2.6	2.2	11.8
Year 2 (n = 815)	*	*	*		*	*
mean	16.5	19.7	33.6	51.7	12.6	44.6
SD	2.3	2.5	3.5	3.4	2.2	12.6

(* indicates a statistically significant difference between scores for Year 1 and Year 2 children)

There are significant differences between children in Year 1 and Year 2, with children in Year 1 having lower entry scores on all measures and lower outcome scores on all measures *except* letter identification. This demonstrates that for Year 1 children to be regarded as successfully completing the programme they do not have to have achieved as high a level of text reading or other literacy achievements as Year 2 children. The only measure where this does not apply is letter identification. The literacy demands on these children will be less exacting as they are in Year 1 and after leaving the programme they will have a whole year before they take the National Tests at seven.

Are the children in Year 1 any less likely to succeed than their Year 2 counterparts?

Table 8
Outcomes for Children in Year 1 and Year 2 Classes

Year (Grade) in school	successfully discontinued		referred		left school		incomplete programme		
	n	%	n	%	n	%	n	%	total
Year 1	652	*35*	298	*16*	79	*4*	822	*45*	1851
Year 2	824	*64*	321	*25*	77	*6*	58	*5*	1280

The children with incomplete programmes are those who are mid-programme at the end of the school year. In the case of Year 1 children, it is expected that their programme will be resumed after the six-week summer vacation. For Year 2 children, it may be less easy to continue their programmes because they will enter the Junior department of the Primary school, or in some cases, a completely separate school, and liaison between Infant and Junior departments becomes more difficult. It is notable that a far higher proportion of Year 1 children have incomplete programmes. This is a by-product of the rolling programme since these children are more likely to be selected after the first children to be selected have completed their programmes. It appears from this that children in Year 1 are less likely to be successfully discontinued. But if we look at the distribution excluding those children who are still mid-programme at the end-of-year data collection point, the figures look slightly different. From these figures, there is no significant difference in the likelihood of being referred or successfully discontinued for children in Year 1 and Year 2.

Table 9
Outcomes for Children with Complete Programmes in Year 1 and 2 Classes

	successfully discontinued		referred		left school	
	n	%	n	%	n	%
Year 1	652	63	298	29	79	7
Year 2	824	68	321	26	77	6

2.6 *The Effect of Gender on Progress in Reading Recovery*

As two thirds of the children who enter the programme are boys, are there gender differences in the effectiveness of the programme?

The only measure on which girls are superior at entry and retain their superiority at outcome is Writing Vocabulary (Table 10). In terms of outcome, there are no gender differences in the likelihood of being successfully discontinued. Thus, whatever factors in the classroom and the world outside conspire to produce a disproportionate number of low-achieving boys, once they are in Reading Recovery they are as successful as girls. Table 11 shows this; the children with incomplete programmes have been excluded.

Table 10
Scores of Boys and Girls on the Observation Survey for the Whole Sample

	Book Level	Concepts About Print	Hearing Sounds	Letter Identification	Word Test	Writing Vocabulary
At Entry						
BOYS (n = 1850)						
mean	1.2	9.6	8.1	27.0	1.6	4.6
SD	1.7	3.7	7.9	15.7	2.2	4.8
GIRLS (n = 1127)						*
mean	1.2	9.5	8.8	27.6	1.7	5.4
SD	1.6	3.6	8.4	15.7	2.2	5.8
At Exit						
BOYS (n = 1157)						
mean	13.5	18.1	30.2	48.9	10.7	35.9
SD	4.5	3.4	7.3	7.3	3.6	15.4
GIRLS (n = 750)						*
mean	13.6	18.2	30.8	49.2	10.9	38.8
SD	4.6	3.6	7.1	7.3	3.8	16.5

(*indicates a statistically significant difference between boys' and girls' scores)

Table 11
Outcomes of Boys and Girls

	boys		girls	
	n	%	n	%
successfully discontinued	893	65	583	67
referred	388	28	231	27
left school	103	7	53	6
total	1384		867	

2.7 *The Effect of Bilingualism on Progress in Reading Recovery*

Although only 20 percent of the children receiving the programme are bilingual, we need to know whether they benefit from it to the same extent as children who only speak English.

Table 12
Outcomes of Monolingual and Bilingual Children

	successfully discontinued		referred		left school		total
	n	%	n	%	n	%	
monolingual	1172	66	480	27	113	6	1765
bilingual	294	63	134	29	39	8	467
total	1466	65	614	28	152	7	2232

This shows that there is no evidence that bilingual children's outcomes differ from those of the children who only speak English.

Table 13
Scores on the Observation Survey for Monolingual and Bilingual Children

	Book Level	Concepts About Print	Hearing Sounds in Words	Letter Identification	Word Test	Writing Vocabulary
At Entry						
MONOLINGUAL CHILDREN						
mean	1.2	9.8	8.7	27.9	1.7	5.1
SD	1.7	3.6	8.1	15.2	2.2	5.3
BILINGUAL CHILDREN						
	*	*	*	*	*	*
mean	0.9	8.4	7.1	24.5	1.4	4.1
SD	1.5	3.9	7.7	17.1	2.1	4.8
At Exit						
MONOLINGUAL CHILDREN						
mean	3.6	18.2	30.4	49.0	10.7	36.9
SD	4.4	3.4	7.3	7.1	3.6	15.4
BILINGUAL CHILDREN						
mean	13.4	17.9	30.7	49.0	11.1	37.3
SD	4.9	3.9	7.0	8.0	3.8	17.5

(* indicates a statistically significant difference between the two language groups)

It is clear from this that on entry to the programme bilingual children are scoring lower on all the subtests of the Observation Profile, but by the end of the programme there are no differences between them. Multiple regressions carried out on the Observation Survey outcomes shows that the only one for which language exerts a significant effect is the Word Test ($p >= .05$).

Table 14
Outcomes for Bilingual and Monolingual Children in Years 1 and 2: The Effect of Year Group and Bilingualism

		successfully discontinued		referred		left school	
		n	%	n	%	n	%
Year 1	monolingual	548	*65*	233	*28*	57	*7*
	bilingual	99	*55*	61	*34*	20	*11*
Year 2	monolingual	624	*67*	247	*27*	56	*6*
	bilingual	195	*68*	73	*25*	19	*7*

This suggests that bilingual children in Year 1 are less likely to have a successful programme outcome than those in Year 2. By Year 2, bilingual children are as successful as monolingual children. What may account for this?

The Effect of Fluency

The term *bilingual* covers children whose fluency in English differs widely. We asked the Reading Recovery teachers to rate the bilingual children's fluency in English on a four-point scale (fairly widely adopted in the UK) which rates a newcomer to English as 1 and someone with near-perfect fluency as 4. While such a rating is admittedly crude, it may enable us to see whether a certain level of English is necessary in order to benefit from the programme. However, the stages of fluency appear to be evenly distributed across both Year groups.

Table 15
Teachers' Ratings of Fluency for Bilingual Children in Years 1 and 2

	Year 1		Year 2	
	n	%	n	%
stage 1 beginner	41	*25*	63	*24*
stage 2	86	*52*	140	*53*
stage 3	32	*18*	48	*18*
stage 4, fluent	6	*5*	12	*5*
total	165		263	

Teachers rate about a quarter of the bilingual children in both years as beginners and half the bilingual children, in both Year 1 and Year 2, at Stage 2 (gaining familiarity). We have unfortunately no other independent measure of the fluency of these children; however it may be that our teachers were not using the fluency ratings accurately and that, rather than using it as a criterion-referenced rating scale according to the descriptions given, they were norm-referencing and tended to have higher expectations of bilingual children in Year 2. The similar distributions across the fluency bands are thus an artifact of teachers' expectations.

The relationship between level of fluency and outcome is affected by Year group. A child who is new to English in Year 1 has a 50 percent chance of being successfully discontinued, while a similar child in Year 2 has a 60 percent chance. The likelihood of being successfully discontinued is greater for Year 2 children at each stage of fluency.

Table 16

Relationship Between Level of Fluency in English and Outcome for Year 1 and Year 2 Children

	Year 1				Year 2			
	successfully discontinued		referred		successfully discontinued		referred	
	n	%	n	%	n	%	n	%
beginner, 1	17	50	17	50	34	59	24	41
stage 2	47	60	31	40	96	74	34	26
stage 3	24	80	6	20	40	83	8	17
fluent, 4	5	83	1	17	12	100	0	0
total	93		55		182		66	

2.8 The Contributions of Grade, Gender, Bilingualism, and Entry Scores to Outcome Measures

Multiple regressions were carried out on all the Observation Survey measures to explore the relative contributions of these factors to outcome. Initial test level is significantly related to outcome level on all the Observation Survey measures, as is year in school. Gender is only related to writing vocabulary and bilingualism to performance on the Word Test. Age at entry to the programme is negatively related to Concepts About Print, Hearing and Recording the Sounds in Words, Letter Identification, and Writing Vocabulary.

3. How Well is the Programme Working in England?

3.1 The data presented so far show that in many respects the programme works in England as it has elsewhere: it takes in low-achieving children and raises their levels of literacy achievement. If the criterion of success is taken to be the proportion of children who are classified as *successfully discontinued* on leaving the programme, then we may feel reassured. Of more concern is the large proportion who do not achieve a successful outcome. If we consider only the children for whom programme outcomes are available, the proportions for each outcome are shown in Table 17.

Given that nearly 70 percent of our teachers are in training and that they provided the data on 65 percent of our children, the fact that two-thirds of the children are successfully discontinued is explicable. However, our referral rates still seem higher than those reported elsewhere. This too may be associated with our inexperienced group of teachers and tutors and provided that we can increase the proportion of the teaching work force who are more experienced, we should see the programme become more successful year by year.

Table 17
Outcomes for Children with Completed Programmes

successfully discontinued	1476	66 percent
referred	619	27 percent
left school	156	7 percent
total	2251	

3.2 How long does the programme take?

Reading Recovery teachers are a highly trained resource and the programme strives to ensure that they enable children to progress as quickly as possible to reach the average level of their classmates. From the point of view of cost-effectiveness and efficiency, a prime concern must be the length of the programme.

Table 18
Mean Number of Weeks for Each Year Group (+ Standard Deviation)

	successfully discontinued			referred			left school			incomplete programme		
	n	mean	(SD)	n	mean	(SD)	n	mean	(SD)	n	mean	(SD)
Year 1	652	23	(7)	298	26	(7)	79	10	(8)	822	9	(5)
Year 2	824	24	(7)	321	27	(6)	76	15	(8)	58	13	(7)

This makes it clear that we are not achieving a maximum of 20 weeks in the programme. We are taking on average three or four weeks longer than that. But most of these children are being taught by teachers in training who, as we have seen, take longer to complete a child's programme.

However, another interesting aspect is that children who are eventually referred receive on average three weeks more time in the programme than their successful counterparts. Is this caution on the part of fairly inexperienced teachers to reach a decision or does it represent the reluctance of teachers to withdraw the programme's support; or may it be that it is harder for teachers to work effectively with children who are especially slow to accelerate? Table 19 also shows the pressure on teachers to complete the programme for children in Year 2, who will be less likely to be able to receive the programme in the following year. This is reflected in the very few unfinished programmes for this year group, which may also affect the teachers' desire to hang on until the child can be successfully discontinued (or not).

A school year in England lasts 190 days, or 38 weeks. Thus, given the time taken to select children, we shall be unlikely to get two cohorts through in a year unless we can reduce the length of the programme to 17 weeks. At present we are clearly some way from achieving this. This must be a cause for concern for those striving to achieve effective implementation.

3.3 Interruptions to Teaching

Earlier indications from the New Zealand team who provided the training in 1991-93 had been that teachers were often unable to teach their children regularly every day. We therefore collected information on teacher absence for illness and other reasons.

Table 19
Average Number of Lessons Lost, By Child Outcome

Reason for teacher missing lesson:

Child:	teacher off sick	teacher absent for other reason	total
successfully discontinued	4	8	12
referred	5	10	15
left school	3	4	7
incomplete programme	1	4	5

Thus, teacher absence may prolong the programme by two to three weeks. But while teachers' absence through ill-health is unavoidable, teachers missing Reading Recovery lessons because they have been asked to carry out other duties (covering classes for absent colleagues, attending courses, and assisting with National Testing) is a factor which doubles their absence rate and which must be tackled by the school. It is intriguing that children who are eventually referred miss twice as many lessons because the teacher is absent for reasons other than ill-health. It may well be that children whose programmes are intermittently interrupted are less likely to have a successful outcome than those with fewer interruptions. The children, too, missed lessons.

Table 20
Average Number of Lessons Missed by Children

Child missed lesson because:	off sick	absent for other reason	total
Child			
successfully discontinued	9	3	12
referred	15	3	18
left school	10	2	12
incomplete programme	4	1	5

Of interest here is that children's absence through ill-health adds two weeks to a programme and children who do not achieve success in the programme tend to have more absence. It is easy to speculate on the relation between absence through ill-health and poor progress in school. Other reasons which cause children to miss lessons are such things as sports day, swimming galas, trips, and visits.

4. Issues for Implementation

Whenever Reading Recovery is transplanted from its native soil in New Zealand to other terrains, some adjustments are necessary to align the programme with the educational system of the new country while not jeopardising those features which ensure its success.

4.1 Age of Entry

We have already made one adaptation to the programme by accepting children on to the programme at 5:9. This has introduced a group with lower literacy levels at entry and also at outcome. It may be that since these children will have longer to make use of the mainstream programme before national testing at seven this will be beneficial in the longer term. Schools are now able to offer an early intervention programme to those falling behind in Year 1. We shall have to wait until the follow-up next year to see whether there is any difference between Year 1 and Year 2 children in their ability to maintain the progress they have made on the programme.

4.2 Bilingualism

We need to be aware that younger and less fluent bilingual children, in effect, those who are struggling at the early stages of learning English, have difficulties with the programme. We shall be addressing the problem of how to find ways to match the early texts we offer them to their style and level of English. At present it may be premature to use lack of fluency with English as a reason for excluding young bilingual learners from the programme.

4.3 Withdrawal

For the past ten years there has been a movement towards mainstreaming children with learning difficulties which has produced an ideological resistance to any programme which involves an element of withdrawal from the classroom. We have encountered resistance to this aspect of Reading Recovery.

4.4 The New Zealand team who trained our tutors and teachers from 1991-93 commented that while they found English teachers to be very sensitive and caring to the children they taught, they felt that they had very low expectations about what could be achieved especially by children from disadvantaged backgrounds. A possible disadvantage of the widespread ideology of child-centredness is that teachers become reluctant to demand high academic achievements from pupils who appear to be struggling.

4.5 Classroom Literacy Programmes

There is great diversity in the approaches to literacy used by class teachers in England and a general eclecticism which makes their practices hard to categorise. We know that the relation between the Reading Recovery programme and the mainstream curriculum is important, but we have not so far been able to explore this further. The GEST funded projects have been monitored by a member of the Schools Inspectorate who has been impressed by the benefits which the programme offers to the literacy practices of the whole school. The National Network will now be disseminating the principles of Reading Recovery more widely and seeking ways to incorporate them into the mainstream literacy programme. The implications for initial teacher training must also be explored.

4.6 Expense

Education authorities are always concerned to know how much the programme will cost and we have found it helpful to be realistic in our costings which show how the initial outlay, in terms of setting up the training site and training a tutor (teacher leader), are offset over a number of years to produce a less expensive programme over time. The largest element in cost is the salary of the teacher but we have been able to show that the cost per child is halved over a five year period as the initial outlay is offset and more children receive the benefit. The costs of the programme must of course be offset against the cost of special educational provision for children whose persistent literacy problems require further long-term specialist help. There are also incalculable benefits for the school as a whole.

4.7 National Coordination

As a relatively inexperienced group, we have found it essential to establish networks of communication and to have a national coordination team to ensure uniformity and quality control of all aspects of the programme. So many problems were new to us that it was crucial that decisions were reached after full consultation and were applied nationwide. Our current concern is how to maintain some national coordination after the end of 1995.

4.8 Funding

The biggest single problem will be how to continue to implement the programme when the special funding provided by the government ceases in April, 1995. Twenty projects have submitted bids to a new government funding body and in January, 1995, it was announced that 12 of them had been successful in securing funds for a further five to seven year period. That leaves a number of tutors understandably anxious about their futures and makes expansion of the implementation hard to anticipate. Thus, just as it begins to operate on a scale large enough to show results, the whole project is threatened with strangulation by financial restriction.

Conclusion

This is both the first and the last report of the *English* national monitoring of Reading Recovery, as next year's cohort will include groups from Wales and Northern Ireland.

References

OFSTED. (1993). *Reading Recovery in New Zealand.* London: HMSO.

Pluck, M. L. (1989). Reading Recovery in a British Infant School. *Educational Psychology, 39*(4), 347–358.

Wright, A. (1992). Evaluation of the First British Reading Recovery Programme. *British Educational Research Journal, 18*(4), 351–367.

LEARNING TO READ: INSIGHTS FROM READING RECOVERY

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LITERACY,
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THE EXPRESSION, LEARNING THE ABCs, HAS COME TO REPRESENT THE SIMPLEST, most basic kind of learning. Yet, first grade teachers know and young children know, that learning about print and learning to read and write are not simple at all. Although many children seem to acquire literacy almost miraculously on their own, that does not mean that the task has been easy for them; their efforts perhaps extending over several years. Other children find reading and writing very difficult, even with the help of excellent teaching.

Even though it is a significant and sometimes arduous accomplishment, most people succeed in learning to read and write when they are still very young. Understanding how literacy develops, however, is extraordinarily more complex. The mental processes involved in literacy and literacy learning are topics that continue to intrigue and perplex the best human minds. Although remarkable advances in knowledge have been achieved, research still does not reveal all we need and want to know about how children learn and why learning is more difficult for some than for others.

Even though our collective understanding is tentative and incomplete, both theorists and teachers form operational theories based on their interpretations of evidence. In the areas of reading and learning to read, theories as well as curriculum recommendations tend to be sharply divided, clustering toward one or the other of two camps.

One group emphasizes meaning, language context, prediction, anticipation, and parsimonious visual sampling in their theories of reading processing, both for children and adults. In terms of teaching practices, these theorists (including whole language advocates) stress immersion in literacy activities pursued for authentic purposes; reading and writing of complete texts; integration of reading and writing; and the importance for teachers of allowing students choice, accepting approximations, and encouraging risk-taking so that children continue to be active discoverers and meaning-makers (Altwerger, Edelsky, & Flores, 1987; Cambourne, 1988; K. Goodman, 1986, 1989; Y. Goodman, 1989; Goodman & Goodman, 1979; Harste, Woodward, & Burke, 1984; Smith, 1985; Watson, 1989; Weaver, 1990).

Another group of theorists stress research evidence suggesting (a) that readers process almost all of the visual information on the page; (b) that fast, automatic word recognition and thorough knowledge of sound-symbol relations separate good from poor readers; and (c) that phonemic awareness plays a significant, causal role in learning to read. These code-emphasis advocates believe that beginning reading instruction should stress development of phonemic awareness, letter knowledge, sound-symbol associations, and rapid word identification (Chall, 1983; Ehri, 1987, 1989; Ehri & Wilce, 1985; Gough & Hillinger, 1980; Juel, Griffith, & Gough, 1986; Just & Carpenter, 1987; Liberman & Liberman, 1990; Stanovich, 1980, 1986). Many of them advocate direct instruction as the most efficient way of fostering these learnings (Chall, 1983; Ehri & Wilce, 1985; Gough & Hillinger, 1980; Liberman & Liberman, 1990).

These controversies over theory and practice of beginning reading produce serious dilemmas for educators. Increasing numbers of teachers are drawn to recommendations for whole language activities and the establishment of classroom literacy environments. Other teachers and many administrators are influenced by the evidence and arguments from code-emphasis writers. Pressed for objective evidence of reading progress, they push for early acquisition of *the code* and frequently for direct instruction on component skills. Policymakers and educators at all levels often feel that almost any curriculum choice they make will subject them to often quite irrational criticism from one or the other of these positions.

In this article, ideas are offered about beginning reading that may be helpful in moving beyond these entrenched positions. These ideas have become personal insights through my experiences in Reading Recovery, a short-term literacy intervention that accelerates the learning of the lowest achieving first grade children so that they progress as successful readers and writers within the classroom (Clay, 1993b; Pinnell, 1990). Working with Reading Recovery increases understanding of early reading and writing and helps develop new perspectives on both theoretical and practical issues.

Reading Recovery offers a rich source of information concerning the emergence of literacy and literacy processes in young children. This program was based upon and has generated significant longitudinal studies of beginning readers and writers (Clay, 1982, 1991, 1993b; DeFord, Pinnell, Lyons, & Place, 1990). Reading Recovery teachers keep extensive documentation of each child's performance and progress and of their teaching actions and decisions. Standardized report forms are completed for each child for easy generation of local, state, and national reports. Moreover, as teachers work to make their teaching moves contingent upon each child's performance and concepts, they have the opportunity to observe and reflect intently upon each child's functioning and progress in daily, individual lessons. Since everyone involved in Reading Recovery continues to teach children at least some of the time, a vast reservoir of shared understanding of early literacy has developed (Clay, 1993a, 1993b; DeFord, Lyons, & Pinnell, 1991; Lyons, Pinnell, & DeFord, 1993; Pinnell, 1990).

Reading Recovery develops children's abilities in both reading and writing. The aim is to foster strategies in both areas so that the child develops a self-extending system that allows him or her to learn more about reading and writing with every engagement in literacy (Clay, 1991, 1993b; DeFord, 1991). These daily, 30-minute, individual tutoring sessions are short term and supplemental. It is expected that the long term development of literacy, language, and communication processes will occur through classroom programs and other school experiences.

Although reading and writing are integrated in Reading Recovery, the focus of this article is reading. The principles underlying the theory and practice of Reading Recovery are particularly relevant toward understanding the roles of meaning and of print knowledge in early reading. These principles may be useful in moving beyond the meaning-emphasis versus code-emphasis polarization that has plagued both reading theory and reading education. As each principle or insight is discussed, comparisons will be made to key tenets of meaning emphasis (whole language) as well as code-emphasis researchers and educators.

However, a caveat is immediately in order. Treating meaning-emphasis and code-emphasis as distinct, homogeneous, and contrasting belief systems is admittedly an oversimplification in two ways. First, it suggests that all people who tend, for example, to give greater emphasis to meaning think alike and hold similar views on all issues relevant to beginning reading. Second, it may be unfair to the knowledge and beliefs of individuals who may be well aware of the complexity and range of factors influencing early literacy, but whose research has focused on one or the other end of the spectrum from meaning to decoding. These positions, however, exist and are influential far beyond the academic community. The categorizations used here reflect the beliefs of educational practitioners and the lay public, which tend to cast these views in stark and contrasting colors, as well as researchers and scholars of early literacy.

The ideas presented draw heavily on the work of Marie Clay and others in Reading Recovery. However, treating the beliefs of Reading Recovery practitioners as if they were homogeneous is also an oversimplification. The author takes full responsibility for their expression and development of Clay's theories and the *Reading Recovery position* in this article, including any omissions, gaps of logic, or other distortions.

Reading is an extremely complex psycholinguistic, socio-communicative, and cognitive process. Because of the complexity of the mental processing and the number of factors (in the text, the reader's experience, and the context) that may influence the processing, it is almost impossible to study the reading process in entirety. Theorists and researchers have tended to take a particular stance for their investigations, sacrificing breadth of view to obtain depth of understanding. Many researchers, typically cognitive psychologists, have tended to study reading *diachronically*, motivated by interest in what is going on in the mind of the reader at particular points in time. Other theorists and researchers have investigated reading diachronically, interested in the changing concerns and processes of the reader as he or she initiates a reading activity; becomes absorbed in the text and in thoughts engendered by the text and prior knowledge; rereads to problem-solve; reflects about meanings; and assimilates, communicates, and acts upon ideas stimulated from the experience.

Viewed *synchronically* (at particular points in time), reading is a high-speed, automatic, simultaneous operation of complex linguistic and cognitive processes. At any moment, a reader of any level of proficiency must keep in mind story meaning, sentence meaning, sentence syntax, and some metacognitive awareness of fit, while simultaneously perceiving and identifying words, word-parts, and punctuation marks. Initially, these processes require much more conscious control and problem-solving, but for the mature reader they operate so automatically that they continue without conscious control and often appear effortless. Both code-emphasis and meaning-emphasis advocates agree upon this general characterization of complex processing, though they disagree about the role that anticipation plays and about the amount of visual detail that is processed while reading for meaning. Many cognitive psychologists, especially code-emphasis advocates, have focused their research primarily upon this synchronic view.

One thing that has not been well understood is the relationship between the high-speed, automatic processing of the mature reader and the processing that beginning readers must do. Over the years, both educators and psychologists have tried a number of ways of simplifying reading to make it easy for children to learn. A trend of the 1970s and 1980s had been to break reading into component parts so that students might master sub-skills in a step-wise fashion. This seemingly logical approach changes the nature of the process. It cuts the child off from useful sources of information and prevents him or her from orchestrating cues from several sources as good readers of all ages do. A component skills approach also gives emphasis to memorization, a type of learning which differs considerably from the complex parallel processing and problem-solving involved in reading (Ausubel, Novak, & Hanesian, 1978; Gagne & Briggs, 1974).

Experience with the intense tutoring of Reading Recovery makes it clear that learning component skills or parts is not the same as reading. Many children who have managed to learn almost all letters and sounds and to read and write several words still cannot read the simplest text. To successfully read texts, even beginning readers must divide their attention between meaning and other sources of information and make decisions in the same way that mature readers do, but within their limited repertoire of knowledge. The only way to learn to do this is to engage in reading activities in pursuit of meaning. Although code-emphasis advocates assume that attention to component skills is helpful, Clay points out that focus on acquiring item knowledge may have a negative effect on learning to read, especially for low-progress children: "The child cannot afford to spend much time practicing detail, and he may become addicted to such practice and find it difficult later to take a wider approach to the reading act" (Clay 1993b, p. 10).

Polanyi's notion of focal and subsidiary attention is helpful here (cited in Cazden, 1992, p. 14). Mature readers give focal attention to meaning and subsidiary attention to visual detail, language structure, and other sources of information. There is much that we do not know about how attention is distributed for beginning readers, but Clay's theories and Reading Recovery teaching experience suggest that learning to read is a matter of learning to give focal attention to meaning and subsidiary attention to cue sources of information. For many children this does not happen if the instruction asks the child to give focal attention to print detail and graphophonemic associations (the *code*).

Whole language theorists strongly support the importance of learning to read through reading (Butler & Turbill, 1984; K. Goodman, 1986; Goodman & Goodman, 1979; Harste, Woodward, & Burke, 1984; Holdaway, 1979; Smith, 1985) and some researchers and cognitive psychologists accept this idea as well (Adams, 1990; Gibson & Levin, 1975; Stanovich, 1994). On the other hand, advocates of the study of phonics and component skills in isolation give much less importance to the reading of continuous texts (Gough & Hillinger, 1980; Liberman & Liberman, 1990). Chall, Jacobs, and Baldwin (1990) have specifically recommended direct instruction on the code as the best approach for economically and educationally disadvantaged children. However, the effectiveness of Reading Recovery in accelerating the learning of thousands of children who began as the lowest readers in their classes serves as strong evidence against the need for an emphasis on phonics and word-learning in isolation for either educationally or economically disadvantaged children or for children with limited proficiency in the language of instruction (Clay, 1993b; Escamilla & Andrade, 1992; Pinnell, DeFord, & Lyons, 1988; Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994).

In addition to its psycholinguistic complexity at any particular point in time, reading involves a complex processing that changes gradually over time (diachronically) influenced by psychological, linguistic, and social-communicative factors. Stated over-simplistically, any act of reading involves personal choice (emerging from a complex mix of interests, feelings, and ideas), activation of prior knowledge and schemata, engagement with the text, metacognitive control, generation of ideas and emotions, integration with existing knowledge and feelings, and judgment and evaluation. Although there may be cycles of engagement, the interplay of these processes changes as a reading event progresses over time.

Recently, many cognitive theorists and researchers have begun to take these processes into account, investigating the effects of prior knowledge, strategies, the assimilation and utilization of ideas, and with older readers—metacognitive knowledge (Baker & Brown, 1984; Brown, 1980). Other reading researchers have maintained a preoccupation with reading viewed synchronically — trying to unlock the processing in the mind of the reader at particular moments in time. They tend to undervalue this wider, kaleidoscopic view of reading as a communication or literacy event over time. As a result, their advice to practitioners has emphasized processing the code represented by print. Meaning-emphasis advocates, on the other hand, have made a strong contribution to our understanding of reading by bringing the communicative, change-over-time aspects of the reading process into prominent view. In fact, they may be guilty of a preoccupation with this wider, diachronic view of reading, undervaluing the evidence offered by cognitive psychologists from various research paradigms.

Reading Recovery theory and practice recognize the importance of meaning and the socio-communicative context for the emergent and beginning reader. Choice of books for rereading is largely under the child's control and new books are selected for the child with a strong sense of what will appeal to the child as well as what is within his or her capability. The book is introduced to the child so that he or she has a good sense of what it is about and so that paths are cleared for that child to be able to understand and read that book at that particular time. Assistance given during reading is carefully gauged to help the child maintain a focus on meaning and orchestrate cues from all sources (meaning, language syntax and phonology, print, pictures, and prior knowledge); meanwhile, the teacher keeps the task easy enough so that it is enjoyable and rewarding for the child.

Children are Constructors of Their Own Knowledge

It seems illogical that children could learn to read by reading before they know how to read! Adults have rightly assumed that most children need their help; the question is: What kind of help works best and is most consistent with the notion of children as constructors of their own knowledge? Educators have used a variety of techniques to simplify beginning reading by exercising controls. The basal reader approach controlled the introduction and repetition of words used, for example, in Scott Foresman's *Dick and Jane Pre-primers* of the 1950s (Robinson, Monroe, & Artley, 1956/1962). Another approach has been to arrange for extensive repetition and feedback (e.g., *Programmed Reading*, Buchanan & Sullivan, 1973). A third has been to write texts in words that fit highly constrained patterns (e.g., *SRA Basic Reading Series*, Rassmussen & Goldberg, 1976). Even more extreme are programs such as *Distar* (Bereiter & Engelmann, 1983) which place strict controls on the language and gestures of the teacher, the child's responses, and the sequence of learnings. All of these approaches assume (a) that adults know best the sequence of learnings children must acquire and (b) that adult control over those sequences enhances learning.

Millions of children have learned through systems with built-in controls. But not all children do. In fact, each system produces failures. There is good reason to believe that the more rigid the program and the tighter the control, the higher the failure rate (Allington, 1991; Allington & McGill-Franzen, 1989; Clay, 1991). What seems to happen is that children who come to school with many early literacy experiences learn from highly controlled programs because they can fill in what is missing. Children with meager literacy backgrounds cannot do that. They may learn what the program teaches, which may not be enough; they cannot make sense of the program as presented (perhaps because the developer did not anticipate the difficulty of what is required); or they cannot find any motivation to learn it. Misled by their delayed start in learning and their apparently limited ability to learn through analogy, many people have assumed that the learning styles and needs of low-progress children must be qualitatively different. Yet, Reading Recovery experience tells us that these children, also, must learn by constructing their own knowledge.

Marie Clay (1991) points out the dangers of imposing adult controls on the tasks and materials of beginning reading:

> Attempts to control texts and learning sequences in these ways have probably made the learning task more difficult because important support systems within the language have been left out. Young children can and do learn more about the complex interrelationships within language than such programmes allow.
>
> Does it matter if texts are contrived . . .? For the more able children, perhaps not. They . . . are able to bridge the gaps between what instruction presents them and what they need to learn . . . . When less able children encounter difficulties, the reading programme is not questioned; rather it is the children who are labeled as having difficulties. (p. 187.)

Experiences such as lap reading and shared reading experiences with very young children suggest that such extreme control is unnecessary. With appropriate adult assistance, children can engage in reading and writing real stories even though they are in the very earliest stages of literacy learning. Appropriate assistance might be defined as: only as much as necessary so that the literacy experience can be successful and satisfying. Assistance is also appropriate if it allows the child scope to see relationships, make connections, and gain control at her or his own pace while at the same time fostering risk-taking and forward movement.

In both reading and writing, the Reading Recovery teacher supports a complete literacy experience—from book choice, to anticipation, to detailed processing, to comment upon meaning and enjoyment. What the child cannot do independently, the teacher does for the child, or she or he supplies just enough assistance (using techniques such as task sharing, modeling, prompts, and questions) so that the child can perform successfully (Wood, 1988; Wood, Bruner, &

Ross, 1976). Reading Recovery teachers learn to give support contingent upon what an individual child needs in order to read and write successfully and they learn to achieve a delicate balance between challenge and fluent, successful performance in their tutoring sessions (Clay, 1993b).

Adherents of both code-emphasis and meaning-emphasis positions tend to accept the notion that children construct their own knowledge. It seems likely that theorists from both camps would accept Cazden's (1992) suggestion that the ideal educational interaction involves both an active learner and an active teacher. The difference in their viewpoints hinges on varying interpretations of how the teacher and learner play active roles.

Code-emphasis people are influenced by research in the areas of learning and cognition, and they stress the importance of the child's active engagement during learning tasks. The learning principles they advocate encourage activation of the learner's prior knowledge, manipulation of materials, active exploration of features, opportunities for application, and transfer of learning. They usually make the assumption, however, that adults know best what the child should be learning, as well as the kinds of activities that will make the learning occur. So although they would place the child in an active role within learning tasks, the learning sequences are determined by the teacher or curriculum-makers.

Meaning-emphasis people, on the other hand, especially whole-language advocates, draw their learning paradigm from the literature on child language acquisition. They concede to the learner very considerable control over what is to be learned, the pace of learning, and the learning activities. Student choice is a fundamental tenet of their philosophical position, but their position about the role of the teacher in relation to the child's learning is less clear. The teacher is viewed as a facilitator of literacy activities and as a participant in the communicative cycles of literacy events, but there seems to be considerable ambivalence about how much coaching and intercession a teacher may engage in, almost to the point of believing that less is better.

Reading Recovery takes the position that there is nothing incongruous between, on the one hand, viewing the child as constructor of learning and on the other, adult assistance and intervention. But learning how to play the role of an active teacher without impeding the child's initiative and responsibility for learning is a very difficult process and is a major reason that the professional development of Reading Recovery is so intense and requires so much time. From the time that a child enters the program, teachers work to encourage that child's initiative and independence in learning. Reading Recovery teachers are asked to follow the child (Clay, 1991, 1993b), yet their curricular decisions about what to reinforce or teach are also based upon a developing understanding of Clay's theories of literacy acquisition, bolstered by their experiences teaching many children. Their instructional decisions (how to assist learning) are strongly contingent upon what a particular child knows, is noticing, and is doing at the time the teacher is working with him or her, yet guided by theory and the teacher's decisions about how best to support this child's learning at this time. Thus, Reading Recovery teaching represents a strong example of an active teacher and an active child.

The Focus of Teaching is Strategies

A key assumption of Reading Recovery is that children must acquire and use efficient strategies to get meaning from texts as they read for meaning. Building upon basic notions about directional conventions of print, the match between spoken and printed word-forms, and simple logical relations (e.g., recurrence, identity), children learn to search for and use information of various kinds in texts. Initially, they depend heavily upon cues from their knowledge of oral language structure and upon meaning cues supplied to them through pictures and the teacher's story introductions. Gradually they increase their ability to use print cues and phonological cues to generate, confirm, or alter their responses.

Reading Recovery teachers foster the development of strategies, including analogical thinking, and as children employ these strategies in reading, they are in effect teaching themselves about print. It is the problem-solving that children do as they pursue meaning through the reading and writing of whole texts that builds the store of words and word-parts that they can identify and recall. The teacher subtly encourages and solidifies these new and emergent learnings, but her or his main objective is to strengthen the learning processes at the child's disposal. The Reading Recovery teacher's unstated message to the child might be expressed as: *I am going to help you work out how to learn.* Learning to recognize words, word-parts, and sound-symbol associations becomes a by-product of the child's learning system and his or her daily efforts.

In contrast, reading programs that espouse direct instruction are based upon the unstated message, *We are going to teach you what you need to know.* The learning occurs primarily through telling. True, there is repetition, recall, feedback, reinforcement, and even many ingenious techniques to foster associations, but new learning is generally revealed to the student on a timetable controlled by adults.

Direct instruction is effective as long as the student is under tuition. Done well, it may be more efficient than instruction which allows the student to construct relationships as if they were personal discoveries. But it is not direct instruction that has given advantaged students their edge. These high progress children have developed self-extending learning systems that work well for them under a variety of conditions. They tend to fill in the gaps when exposed to programs with a narrow emphasis; they make connections quickly and learn easily through analogy (Clay, 1991). These characteristics were acquired before they entered school in homes that did not use direct instruction. If low progress learners are to catch up with such peers, they must acquire the same self-initiating systems of learning. Advocates of direct instruction claim that this is the most efficient way for slower learners to learn. For a sprint, they may be right; for a marathon, the opposite is true. In order for learning to be established as a lifelong process; motivation, momentum, and persistence must come from within.

Print Knowledge Emerges and Becomes Internalized

Whole language researchers have insisted that for adult readers, prediction plays a heavy role. They claim that the mature reader samples only as much visual information as necessary to confirm anticipated meanings (K. Goodman, 1967, 1989; Smith, 1985; Weaver, 1994). They object to instruction that isolates elements of print and provides practice on the sound-symbol associations. They down-play (if not deny) the importance of detailed knowledge of these print-language associations. Code-emphasis researchers disagree; people become good readers by becoming faster and more efficient at word identification, not by coming better guessers, and word identification is related to strong knowledge of sound-symbol associations (Ehri, 1989; Ehri &Wilce, 1985; Stanovich, 1986, 1994).

The research cited by the code-emphasis researchers cannot be ignored; better readers are faster and more accurate word-processors (Adams, 1990; Juel, 1991; Stanovich, 1986). But did they become better readers because they learned to be good word processors? Or did they become good word processors because they learned to be good readers? The theory and experience of Reading Recovery suggests that the latter is true, at least for a large number of children. As mentioned earlier, the problem-solving work that children do as they read and write for meaning leads to increasing knowledge of words and word-parts. One explanation of the accelerated learning phase that Reading Recovery children enter is their ability to learn words by using searching and cross-checking strategies. They learn to search meaning at several levels, language structural expectations, and cues from print and from the sounds of anticipated words—all while retaining the meaning of the story as their goal. They also learn to search their own knowledge of known words and word-parts and to reason by analogy from that knowledge to new items.

Researchers focused on the code or on phonemic awareness have argued that learning to read is quite different from oral language acquisition and that learning to read requires deliberate and sequenced instruction (Liberman & Liberman, 1990; Liberman, Shankweiler, Liberman, Fowler, & Fischer, 1977). It has been assumed that those children who acquire with remarkable rapidity a knowledge of relationships between patterns of print and patterns of language have been precocious and rare (Clark, 1976; Durkin, 1966). Experience with Reading Recovery children indicates that almost all children are capable of acquiring this knowledge at a fairly rapid rate if they have developed a self-learning system and enjoy frequent, regular opportunities for literacy experiences. Whether this fact represents an amazing general ability of young humans to learn or a specific ability for language learning (including literate language) is something that merits considerable further research. What is clear, however, is that we could never be as successful with literacy instruction if children were not naturally endowed as learners. The tasks of teaching are to help children unlock this amazing ability and to establish conditions that foster and allow literacy learning to continue. When we try to do more than that we end up making it hard for those who haven't yet learned how to learn and we get in the way of those who can make rapid, natural progress.

One lesson from Reading Recovery experience is that for many children the initial task of learning how to learn words is very difficult. Two-dimensional, visual-perceptual analysis is quite different from previous experience and these beginners have no categories to help with the memory storage of the visual forms. Limited phonemic awareness and sound-symbol associations make it difficult to link what they attend to visually to other knowledge. By starting with what the child does know and proceeding slowly, Reading Recovery teachers help children develop these rudimentary learning processes so that accelerated learning is possible.

Words become known gradually, over repeated experiences and exposures. But research evidence (Zaporozhets & Elkonin, 1971, reported in Clay, 1991, p. 282-283) and Reading Recovery experience suggest that the speed at which they are acquired depends upon the extent to which the learner is contributing to the learning task. If the learner is passive, the number of repetitions required for learning is very high, for example, the controlled vocabulary and endless repetitions of basal readers was based on research indicating that at least 40 repetitions were necessary to acquire a word (Gates, 1961). But, if the child is using problem-solving strategies while reading with meaning very much in mind, he or she may learn a new word after four to six encounters. The knowledge may still be limited, dependent perhaps on a particular story context, but it seems to progress fairly quickly to the automatic and certain level. As most children progress through Reading Recovery, the time needed to acquire knowledge of words and word-parts seems to shorten at an almost geometric rate.

In other words, once the learning processes are in place, a child can continue to learn in less than ideal conditions. He or she no longer needs contingent teaching from a skilled tutor. This is the logic of the short-term intervention; this is why Reading Recovery children are discontinued (graduated) to continue their literacy learning in regular classrooms.

Children must acquire and use sound-symbol associations in order to become readers. But in Reading Recovery this is not the central focus of teaching and learning. The Reading Recovery teacher recognizes and trusts the process of incidental learning, but she or he also assists it in several ways: (a) the teacher finds out what the child knows about words and letters upon entrance and helps the child use that knowledge as a bridge to new learning (e.g., if the child's name is Mark and he can write *Mark*, she calls attention to the similarity of Mark and Mother, first by telling or demonstrating, and then by asking or commenting); (b) during both reading and writing tasks, phonemic awareness is fostered by using Elkonin (1973) boxes and questioning techniques to help children hear and record sounds in words; (c) children are encouraged to learn one or two new words occasionally through repeated writing and unprompted recall. By the time that a child is flexible and fluent in writing about 30 or 40 high frequency words, he or she will have gained familiarity with most of the basic sound-symbol associations of English (Clay, 1991); (d) based upon careful observation and knowledge of children, the teacher makes comments or asks questions that help the child see relationships and develop networks of associations; and (e) children are engaged for two to three minutes daily in very simple puzzle-like activities with magnetic letters to further demonstrate these relationships and to let children continue to explore links that they have begun to see through reading and writing (Clay 1993b).

We see that Reading Recovery children acquire the knowledge of words and sound symbol-associations that is at least equivalent to most of their age-mates. However, this is done in the process of reading continuous texts with a focus on meaning and in the process of writing meaningful sentences and stories. The teaching interventions that assist and help solidify this learning are minimal and are based upon the teacher's awareness not only of what the child knows, but what he or she is beginning to notice as well (DeFord, 1991).

The difference between Reading Recovery and meaning-emphasis advocates is that the latter (whole-language) has faith that children will acquire almost all they need to know almost entirely through incidental learning as they engage in literacy activities under appropriate conditions. They acknowledge the utility of demonstrations and models, for example, as in invitational mini-lessons (Atwell, 1987), but they shrink away from more intrusive teaching moves, such as assisted performance, informing, prompting, and immediate feedback, that also occur in Reading Recovery. The difference between Reading Recovery and supporters of strong code-emphasis is that the latter make word-learning and sound-symbol associations the focus of their teaching, rather than the learning of strategies and processes that would allow eventual independence. They tend not to trust or recognize incidental learning. Often they operate on the principle: the stronger the dose, the greater the chance that all children will learn. According to Clay (1991; 1993b), this *overkill* approach is self-defeating. It creates failure situations for many children because the teaching is at too high a level, it creates boredom for the high progress learner, and it makes reading an unpleasant duty rather than a rewarding literacy experience.

Maintaining a Focus on Reading is Always Important

As explained before, code-emphasis researchers downplay the role of context and prediction in the reading process, basing their evidence primarily on (a) the high sensitivity of mature readers to visual detail in print and (b) the improbability of guessing the next word in any sentence or discourse string. But their evidence does not show that meaning is *not* operating or playing an important part. In fact, their data show that anomalies of any kind (distortions of spelling, syntax, or semantics) slow down the reader's processing and the more the meaning is disrupted by the anomaly, the more the processing is disrupted (Just & Carpenter, 1987; McConkie, 1979; Rayner & Pollatsek, 1989).

Experience with Reading Recovery teaching demonstrates that if the meaning breaks down, almost everything breaks down. For children with very limited knowledge of words and print, there is a necessary dependence on meaning and language structure in order to participate in literacy experiences at all. But throughout the program, what seems to distinguish independent readers from those who still need individual help is their ability to read fluently with meaning in mind, making short detours for problem-solving at the word level when necessary, but returning almost immediately to a discourse level of meaning.

Meaning plays a role in reading in three ways: (a) it is the goal and the motivation; (b) it is a source of information when searching for a response; and (c) it is used in confirming, rejecting, or self-correcting responses. Reading Recovery teachers usually respond to a child's reading difficulties (miscues, stoppages) by prompting first for considerations of meaning. As children progress, teachers balance their prompts for meaning, language structure, and print detail in relation to the pattern of the child's performance (Clay, 1991, 1993b).

Whole language advocates would agree wholeheartedly with the Reading Recovery emphasis on meaning. Code-emphasis researchers tend to assign less importance to meaning as part of the ongoing processing during reading, partly because print knowledge accounts for a much higher percentage of individual and group differences in their investigations and partly because of their belief that letter and letter-sound knowledge is a necessary foundation and prerequisite for reading.

A Theory of Change Over Time

It is significant that Clay's theories of reading and reading acquisition were developed on the basis of intense longitudinal studies of school children between the ages of five and six who were in the early stages of literacy acquisition. In addition to standardized formal measures taken at ages 5:0, 5:6, and 6:0, Clay's study involved weekly observations of 100 children's reading performances throughout an entire year (Clay, 1982). Evidence supporting code-emphasis theories of learning to read derives almost exclusively from studies which collect data at two, three, or sometimes five points of time; their research questions center upon the relative effects of specific variables, such as phonemic awareness, letter knowledge, ability to read pseudo-words, and reading comprehension (Bradley, Bryant, MacLean, & Crossland, 1989; Juel, Griffith, & Gough, 1986). Clay, on the other hand, observed children's processing as they were learning to read and write and she was able to record the diverse characteristics of individual children as learning progressed. As a result, her theories are based more strongly upon notions of (a) change over time and (b) unique contributions by individual learners than are other theoretical frameworks.

Children's reading behavior changes over time as their concepts about reading and writing emerge, as their knowledge about print increases, and as they learn how to use that knowledge strategically in the process of reading (which is also the process of learning to read). Initially, children respond to books and print globally, based upon their well-developed language capability, their experience with stories and narration, and their emerging literacy concepts. For example, they may tell a story from the pictures of a child's book, with almost no reference to print features (even if they realize what print is for). Soon they discover the relationship between oral language and print, and when they have some control over directional conventions, they can begin to match oral words with word boundaries while reading with a story in mind. What they may have learned about letters and written words helps them in these discoveries and the ability to match language to print in turn leads to new discoveries about letters and words.

As children acquire the alphabetic principle (with or without tuition), they begin to make new discoveries about sequences of letters and sequences of sounds within words and across related sets of words. Most children are able to learn about print through teacher-directed instruction; though in the process, some children become rather passive learners, dependent upon external guidance. It is the children who are able to use knowledge strategically and analogically who make rapid learning progress and who continue to advance their learning by the actions of reading and writing continuous texts while keeping meaning very much in mind.

Though what has been summarized might seem to fit nicely into a staged theory of reading acquisition, Clay's observations of the variability of children's progress toward literacy suggest otherwise. The notion of children as constructors of their own knowledge is consistent with the finding that development may be uneven and comparatively different from child to child and that many children form misconceptions about how reading and writing work. The broad outlines of literacy development can be traced (largely because the nature of the print conventions and the processes of reading and writing are relatively invariant), but the fine points concerning the progress of any individual cannot be easily predicted within those outlines or fit into stage theories of any specificity useful in instruction.

Although Clay's theories emphasize the role of meaning and language in learning to read, they also encompass the growing sophistication of children's knowledge about print. But this knowledge is quite complex, drawing upon phonological knowledge and awareness, perceptual learning, and an increasing intuitive awareness of complex relationships between print sequences and conventions and language and meaning. Code-emphasis research has uncovered the strong relationship between knowledge of the print-language coding conventions and measures of reading capability. Clay's theories do not deny the strength of that relationship. But they lead us to realize that reading, even in its earliest manifestations, is much more complex than the ability to apply sound-symbol knowledge. Furthermore, they lead to the realization that what produces that knowledge is the child's application of intelligent strategies as he or she engages purposely and enjoyably in meaningful activities rich in literacy opportunities.

Clay's theories also explain why beginning reading instruction which emphasizes word-learning and sound-symbol relationships can reduce the possibility that many children will become good readers. The low-progress children may learn to plod through spelling and decoding exercises and struggle through text when required, but they will not acquire the learning strategies or the rich tapestry of knowledge and abilities that literate reading involves. Clay's theories also suggest that in order to get started, some children will need a much stronger and more skillful intervention than classroom instruction can provide, no matter how rich the literacy activities and the teaching and learning interactions that occur.

Summary

Key concepts from the theoretical work of Marie Clay and the extensive teaching experience and results of the Reading Recovery program offer a rich source of information about the initial stages of literacy. This intense and richly documented intervention program for the lowest achieving first grade students offers insights that are especially relevant to the theoretical and practical debates between meaning-emphasis (whole language) and code-emphasis writers and researchers.

The principles from Reading Recovery theory and experiences presented here may help refocus these debates more productively by changing the focus of these debates more productively by changing the focus of inquiry. The ideas presented here are:

1. *Reading is a complex, problem-solving process* that cannot be simplified by focusing the learners attention to one source of information at a time.

2. *Reading is a phased, thinking-feeling-communication process* involving motivation, the intentional pursuit of meaning, cycles of engagement, monitoring, and assimilation into and accommodation of existing knowledge structures.

3. *Learners construct their own knowledge* by actively pursuing meaning, relating new learning to old, and using strategies to solve problems.

4. *The focus of teaching is strategies.* By learning how to learn—as they explore the new worlds of literacy, stories, and print under expert tutorial guidance—young children develop a self-extending learning system that may serve them as long as they are active in literate activities.

5. *Print knowledge emerges and becomes internalized.* Meaning and language structure probably play no less a role in mature reading than in beginning reading. But print knowledge changes dramatically, even during the first year of literacy instruction. Once they have learned how to learn, young children have an almost uncanny capacity to acquire knowledge of relationships between letter patterns and language patterns, given adequate and appropriate reading and writing experiences.

6. *Children do learn to use associations.* Children's miscues increasingly reflect attention to print and letter cues as they become more accomplished readers (Clay, 1982, 1991). But guidance in the acquisition of that knowledge should be delicately and sensitively attuned to what the child already knows and to how he or she is performing. Either a laissez-faire approach or an overkill approach is damaging to many children. Build on strengths, teach only as much as needed, and acquire literacy through the reading, writing, and rereading of continuous texts are principles of Reading Recovery that merit wider adoption.

7. *Maintaining a focus on meaning is always important.* If reading is not a meaning-driven, meaningful activity, it is not reading. Laboratory and classroom research studies must seriously investigate the effects of losing a focus on meaning and on language structure, both before and after the development of some sophistication in perceiving and processing patterns of print.

8. *Theories of beginning reading must recognize changes over time.* Although the results of learning to read involve knowledge of print code conventions and high-speed automatic word recognition, Clay's theories inform us that the beginnings of literacy involve language, a sense of story, and concepts about books and print at a rather global level. Reading capability emerges and becomes a rich mixture of knowledge about print sequences, phonemic awareness, and meaning and syntactic relationships as children apply knowledge strategically in meaningful reading and writing experiences. Individual paths of progress are only roughly predictable because of the diverse opportunities and contributions to learning of each individual.

All leading theorists in the debate from either side would agree that prior knowledge, meaning, language cues, letter and word cues, punctuation and other print conventions, and phonological cues all play a part in that enormously complex process that is reading. Disagreements over emphasis, definitions, the inclusion of the broader social-emotional-communication considerations, and the translation of ideas into practice prolong a schism that presents unfortunate dilemmas for educational practitioners. Each side of the debate holds perceptions prejudiced by differences of value and belief. But, observations and reflections about the onset and early stages of literacy from the special vantage point of Reading Recovery teaching is a resource that should not be overlooked. It can help us move beyond entrenched positions to more productive research and to more helpful instructional practices in early literacy education. As Stanovich (1994) has urged, if we approach these issues with good intentions and try hard to overcome our biases, much can be learned from our collective thought and experience.

References

Adams, M. J. (1990). *Beginning to read: Thinking and learning about print.* Cambridge, MA: MIT Press.

Allington, R. (1991). The legacy of "slow it down and make it more concrete." In J. Zutell & S. McCormick (Eds.), *Learner factors/teacher factors: Issues in literacy, research and instruction.* Chicago: National Reading Conference.

Allington, R., & McGill-Franzen, A. (1989). School response to reading failure: Instruction for Chapter I and special education students in grades two, four, and eight. *The Elementary School Journal, 89,* 530-542.

Altwerger, B., Edelsky, C., & Flores, B. (1987). Whole language: What's new? *Reading Teacher, 41,* 141-154.

Atwell, N. (1987). *In the middle: Writing, reading and learning with adolescents.* Upper Montclair, NJ: Boynton/Cook.

Ausubel, D., Novak, J., & Hanesian, H. (1978). *Educational psychology: A cognitive view* (2nd ed.). New York: Holt, Rinehart and Winston.

Baker, L., & Brown, A. (1984). Metacognitive skills and reading. In P. D. Pearson, R. Barr, M. Kamil, & P. Mosenthal (Eds.), *Handbook of reading research* (Vol. 1). New York: Longman.

Bereiter, C., & Engelmann, S. (1983). *Distar: Direct instruction in arithmetic and reading.* Chicago: Science Research Associates.

Bradley, L., Bryant, P., MacLean, M., & Crossland, J. (1989). Nursery rhymes, phonological skills and reading. *Child Language, 16,* 407-428.

Brown, A. (1980). Metacognitive development and reading. In R. Spiro, B. Bruce, & W. Brewer (Eds.), *Theoretical issues in reading comprehension.* Hillsdale, NJ: Erlbaum.

Buchanan, C., & Sullivan, M. (1973). *Programmed reading.* New York: McGraw-Hill, Webster Division.

Butler, A., & Turbill, J. (1984). *Towards a reading-writing classroom.* Portsmouth, NH: Heinemann.

Cambourne, B. (1988). *The whole story.* Auckland, NZ: Ashton Scholastic.

Cazden, C. (1992). *Whole language plus: Essays on literacy in the United States and New Zealand.* New York: Teachers College Press.

Chall, J. (1983). *The great debate* (Rev. ed.). New York: McGraw Hill.

Chall, J., Jacobs, V., & Baldwin, L. (1990). *The reading crisis: Why poor children fall behind.* Cambridge, MA: Harvard University Press.

Clark, M. (1976). *Young fluent readers.* Portsmouth, NH: Heinemann.

Clay, M. M. (1982). *Observing young children: Selected papers.* Portsmouth, NH: Heinemann.

Clay, M. M. (1991). *Becoming literate: The construction of inner control.* Portsmouth, NH: Heinemann.

Clay, M. M. (1993a). *An observation survey of early literacy achievement.* Portsmouth, NH: Heinemann.

Clay, M. M. (1993b). *Reading Recovery: A guidebook for teachers.* Portsmouth, NH: Heinemann.

DeFord, D. (1991). Using reading and writing to support the reader. In D. DeFord, C. Lyons, & G. Pinnell, *Bridges to literacy: Learning from Reading Recovery.* Portsmouth, NH: Heinemann.

DeFord, D., Lyons, C., & Pinnell, G. (1991). *Bridges to literacy: Learning from Reading Recovery.* Portsmouth, NH: Heinemann.

DeFord, D., Pinnell, G., Lyons, C., & Place, A. (1990). *The Reading Recovery follow-up study* (Vol. II.). Columbus: The Ohio State University.

Durkin, D. (1966). *Children who read early: Two longitudinal studies.* New York: Teachers College Press.

Ehri, L. (1987). Learning to read and spell words. *Journal of Reading Behavior, 19,* 5-31.

Ehri, L. (1989). Movement into word reading and spelling: How spelling contributes to reading. In J. Mason (Ed.), *Reading and writing connections.* Boston: Allyn and Bacon.

Ehri, L., & Wilce, L. (1985). Movement into reading: Is the first stage of word learning visual or phonetic? *Reading Research Quarterly, 20,* 163-179.

Elkonin, D. (1973). U.S.S.R. In J. Downing (Ed.), *Comparative reading.* New York: Macmillan.

Escamilla, K., & Andrade, A. (1992). An application of Reading Recovery in Spanish. *Education and Urban Society, 24*(2), 213-226.

Gagne, R., & Briggs, L. (1974). *Principles of instructional design.* New York: Holt, Rinehart and Winston.

Gates, A. (1961). Vocabulary control in basal reading material. *The Reading Teacher, 15,* 81-85.

Gibson, E., & Levin, H. (1975). *The psychology of reading.* Cambridge, MA: MIT Press.

Goodman, K. (1967). Reading: A psycholinguistic guessing game. *Journal of the Reading Specialist, 6,* 126-135.

Goodman, K. (1986). *What's whole in whole language.* Portsmouth, NH: Heinemann.

Goodman, K. (1989). Whole language research: Foundations and development. *The Elementary School Journal, 90,* 208-221.

Goodman, K., & Goodman, Y. (1979). Learning to read is natural. In L. Resnick & P. Weaver (Eds.), *Theory and practice of early reading* (Vol. 1). Hillsdale, NJ: Erlbaum.

Goodman, Y. (1989). Roots of the whole language movement. *The Elementary School Journal, 90,* 113-127.

Gough, P., & Hillinger, M. (1980). Learning to read: An unnatural act. *Bulletin of the Orton Society, 30,* 179-196.

Harste, J., Woodward, V., & Burke, C. (1984). *Language stories and literacy lessons.* Portsmouth, NH: Heinemann.

Holdaway, D. (1979). *Foundations of literacy.* Portsmouth, NH: Heinemann.

Juel, C. (1991). Beginning reading. In R. Barr, M. Kamil, P. Mosenthal, & P. Pearson (Eds.), *Handbook of reading research* (Vol. 2). New York: Longman.

Juel, C., Griffith, P., & Gough, P. (1986). Acquisition of literacy: A longitudinal study of children in first and second grade. *Journal of Educational Psychology, 78,* 243-255.

Just, M., & Carpenter, P. (1987). *The psychology of reading and language comprehension.* Boston: Allyn and Bacon.

Liberman, I., & Liberman, A. (1990). Whole language vs. code emphasis: Underlying assumptions and their implications for reading instruction. *Annals of Dyslexia, 40,* 51-76.

Liberman, I., Shankweiler, D., Liberman, A., Fowler, C., & Fischer, F. (1977). Phonetic segmentation and recoding in the beginning reader. In A. Reber & D. Scarborough (Eds.), *Toward a psychology of reading.* Hillsdale, NJ: Erlbaum.

Lyons, C., Pinnell, G., & DeFord, D. (1993). *Partners in learning.* New York: Teachers College Press.

McConkie, G. (1979). On the role and control of eye movements in reading. In P. A. Kolers, M. E. Wrolstad, & H. Bouma, (Eds.), *Processing of visible language* (Vol. 1). New York: Plenum Press.

Pinnell, G. (1990). Success for low achievers through Reading Recovery. *Educational Leadership, 48,* 17-21.

Pinnell, G., DeFord, D., & Lyons, C. (1988). *Reading Recovery: Early intervention for at-risk first graders.* Arlington, VA: Educational Research Service.

Pinnell, G., Lyons, C., DeFord, D., Bryk, A., & Seltzer, M. (1994). Comparing instructional models for the literacy education of high-risk first graders. *Reading Research Quarterly, 29,* 8-39.

Rayner, K., & Pollatsek, A. (1989). *The psychology of reading.* Englewood Cliffs, NJ: Prentice Hall.

Rassmussen, D., & Goldberg, L. (1976). *SRA basic reading series.* Chicago: Science Research Associates.

Robinson, H., Monroe, M., & Artley, A. S. (1956/1962). *The new basic readers: Curriculum foundation series.* Chicago: Scott Foresman.

Smith, F. (1985). *Reading without nonsense* (2nd ed.). New York: Teachers College Press.

Stanovich, K. (1980). Toward an interactive-compensatory model of individual differences in the development of reading fluency. *Reading Research Quarterly, 16,* 32-71.

Stanovich, K. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 21,* 360-401.

Stanovich, K. (1994). Romance and reality. *The Reading Teacher, 47,* 280-291.

Vygotsky, L. (1978). *Mind in society: The development of psychological processes.* Cambridge, MA: Harvard University Press.

Watson, D. (1989). Defining and describing whole language. *The Elementary School Journal, 90,* 130-141.

Weaver, C. (1990). *Understanding whole language: From principles to practice.* Portsmouth, NH: Heinemann.

Weaver, C. (1994). *Reading process and practice: From socio-psycholinguistics to whole language* (2nd ed.). Portsmouth, NH: Heinemann.

Wood, D. (1988). *How children think and learn.* Cambridge, MA: Basil Blackwell.

Wood, D., Bruner, J., & Ross, G. (1976). The role of tutoring in problem-solving. *Journal of Child Psychology and Psychiatry, 17,* 89-100.

FACTORS AFFECTING STUDENTS' PROGRESS IN READING: KEY FINDINGS FROM A LONGITUDINAL STUDY

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Abstract

As a basis for policy development, the study reported here was a research initiative of the State Board of Education and School Programs Division of the Ministry of Education, Victoria, Australia. Conducted among a sample of 5,000 students and their teachers, drawn from 70 government and 30 non-government elementary schools and secondary colleges, the study was designed to provide information over a four-year period (1988-1991) about factors affecting students' literacy development (with a particular focus on reading achievement), and to identify key factors affecting that development.

The study had two primary foci, substantive and methodological. The substantive focus entailed an empirical delineation of student level, teacher level, and school level factors that were hypothesised to influence students' achievements and progress in reading, with particular emphasis on the implications of findings for both policy and practice. The methodological focus involved a comparative examination of the adequacy of explanatory modeling techniques to account for the magnitude and stability of these influences over the first three years of the study, and to use the quantitative findings as a basis for intensive qualitative investigations of class/teacher and school level characteristics among a sub-sample of participating schools during the fourth year. Thus, both quantitative and qualitative methods were used.

Following an outline of the policy context for the study, the related research and description of the methodologies employed, the paper presents a nontechnical summary of key findings with particular emphasis on their related policy implications. Specific technical details of findings from various aspects of the study have been reported elsewhere (Rowe, 1990a, 1990b, 1991b; Rowe & Rowe, 1992a, 1992b, 1992c; Rowe & Sykes, 1989).

Policy Context of the Study

CONSISTENT WITH THE ADOPTION OF CORPORATE MANAGEMENT MODELS in educational governance and the prevailing climate of *economic rationalism* in which such models operate, policy activity since the mid 1980s related to issues of *accountability, assessment, standards monitoring, performance indicators, quality assurance*, and *school effectiveness* have been widespread throughout Australia, Britain, Europe, and North America (e.g., Austin & Reynolds, 1990; Bosker, Creemers, & Scheerens, 1994; Bottani & Delfau, 1990; Broadfoot, Murphy, & Torrance, 1990; Chapman, Angus, Burke, & Wilkinson, 1991; Cuttance, 1992; Floden, 1994; Hewton, 1990; Jesson, Mayston, & Smith, 1987; OECD, 1989, 1993; Reynolds & Cuttance, 1992; Shavelson, 1994; Wyatt & Ruby, 1989). Much of this activity continues to be directed away from concerns about *inputs* of education systems (i.e., curriculum and teacher professional development), towards *outputs* (i.e., student performance, teacher, and school effectiveness).

From the mid-1980s in Australia, focus on standards monitoring, performance indicators, accountability, and teacher and school effectiveness issues were ultimately given impetus by the federal government's financial support for the *Good Schools Strategy* and its related projects, namely, the *National Schools Project* (NSP) and the *National Project on the Quality of Teaching and Learning* (NPQTL) (Schools Council, 1991). "The NSP is a major action research activity of the NPQTL to investigate how changes to work organization can lead to improved student learning outcomes" (Hill, 1992, p. 403). This activity confirmed an increasing national approach to educational governance and accountability by the government, first signaled in the paper entitled, *Strengthening Australia's Schools* (Dawkins, 1988). Above all, the major effect of these initiatives was to signal major shifts in government policy intention ". . . to bring the delivery of professional educational services into public sector accounting, underscored by a concern to ensure that such services represent value for money" (Rowe & Sykes, 1989, p. 129). Reviews of these developments have since been provided by Chapman, Angus, Burke, and Wilkinson (1991) and McGaw, Piper, Banks, and Evans (1992).

Consistent with these shifts in focus, the rhetoric of Australian government reports specifically related to teacher education and professional development during this time (e.g., Joint Review of Teacher Education, 1986; Report of the Inservice Teacher Education Project, 1988; Report of the Quality of Education Review Committee, 1985) emphasised the importance of functional links between teacher professional development and the quality of student educational outcomes. This emphasis was curious given that there was, and continues to be, a serious shortage of empirical evidence to support such links. While there was an expanding local and international literature attesting to the efficacy of inservice professional development for teachers (Eraut, 1985; Guskey, 1986; Harris & Fasano, 1988; Ingvarson, 1987; Ingvarson & Mackenzie, 1988; Joyce & Showers, 1988; Sutton, 1987; Walberg, 1986), evidence for its impact on student outcomes was scarce (for exceptions, see Brophy, 1986; Brophy & Good, 1986). In fact, Ingvarson and Mackenzie (1988) noted with alarm: "A considerable investment is made in further training and development for teachers, but little is known about the impact or benefits of most of what takes place" (p. 139). This comment continues to apply to a dearth of knowledge about *benefits* for students.

However, teacher professional development in Australia during the mid 1980s, particularly in the teaching of literacy, was characterised by intense activity. Major impetus for this came from the 1984 Commonwealth Schools Commission-funded program, *Basic Learning in Primary Schools* (BLIPS), which was to operate between 1985 and 1987. Focused on the early years of elementary education (kindergarten [K] to Grade 3), the central aim of this program was (Commonwealth Schools Commission, 1984):

> . . . to raise the achievement levels of primary school children in basic subjects. Particular emphasis is to be placed upon improving students' performance in reading, writing, speaking, and listening. (p. 1)

Three priority areas were identified for program support: (a) inservice teacher professional development programs, (b) home-school relations and parental participation, and (c) curriculum change. However, the major priority area was teacher professional development, ". . . providing intensive programs to improve elementary teachers' understanding of language . . . learning, and developing their skills in teaching and observing children" (Commonwealth Schools Commission, 1984, p. 1).

By the end of 1987 in the state of Victoria, there were at least nine literacy programs operating in both elementary and secondary schools (Rowe, 1987) including the Early Literacy Inservice Course (ELIC), the Later Reading Inservice Course (LaRIC), the Continuing Literacy Inservice Course (CLIC) and Reading Recovery (Clay, 1985). Some of these programs had statewide exposure, involving the training of large numbers of teachers. For example, it was estimated that approximately 4000 Victorian teachers had been trained in the ELIC program by the end of 1987 (Rowe, 1987; Rowe & Griffin, 1988). Other programs were localised (e.g., Reading Recovery) or were specific to Catholic schools (i.e., CLIC). Others were undergoing trial or were in their first stages of operation (e.g., LaRIC and Key Group Literacy).

Although there was a body of qualitative, formative evaluation literature for these programs separately, indicating positive changes in teacher confidence and associated teaching practices (e.g., Charlton & Holmes-Smith, 1987; Felton, 1986; Geekie, 1988; Glen, 1986; Rowe, 1987; Wheeler, 1986), quantitative attempts to examine the impact of professional development (PD) programs on changes to teachers' professional self-perceptions and then to student achievement outcomes were conspicuous by their absence. A notable exception was the study by Smylie (1988) whose findings indicated that changes in teachers' classroom practices due to professional development (PD) were a direct function of teachers' professional self-perceptions (i.e., "personal teaching efficacy," p. 25). However, a longitudinal study of teacher PD effects on student outcomes had yet to be conducted. In spite of the conceptual and methodological difficulties entailed by this kind of research (namely, a multilevel data structure of students nested within teachers and schools over time), it was argued that ". . . the estimation of changes to teachers' professional self-perceptions and practices is crucial to the provision of evaluative criteria for determining the effects of inservice teacher training on student achievement outcomes" (Rowe & Sykes, 1989, p. 130).

Against this background, a formal proposal for a longitudinal study of the impact of inservice teacher professional development programs on students' literacy achievements was formulated (Rowe & Griffin, 1988) and submitted for funding of its operational costs, to be met by a direct grant from the *Commonwealth Resource Agreement 1988: Literacy and Numeracy* allocation. A rationale for the study was expressed in the following terms (Rowe & Griffin, 1988):

> Given the heterogeneity of existing literacy programs, a desirable outcome of the study would be the identification of program effects and their related mediating factors that yield sustained improvement in students' literacy achievements over time. (p. 1)

The original intention of the study was to focus on students' literacy development in *reading, writing*, and *spoken language*. This intention was subsequently modified to focus exclusively on reading. The reasons for this were twofold. First, psychometrically reliable instruments for the measurement and assessment of students' writing and speaking/listening skills spanning the full range of elementary and secondary schooling had yet to be devised. This was especially the case for students in the early years of elementary schooling (Griffin, 1990; Griffin & Nix, 1991). The second reason was that the major thrust common to the literacy PD programs in Victorian schools at the time (as cited) emphasised the development of students' competencies in reading.

Scope and Nature of the Investigation

In a comprehensive review of the reading research literature, Calfee and Drum (1986) noted: "Literacy is the foundation for lifelong learning; thus its importance in practice and in research" (p. 843). The *prima facie* simplicity of this assertion belies the fact that literacy-related research constitutes one of the most vital, vigorous, diverse, complex, and problematic domains of educational and psychosocial inquiry. From a preliminary search of the ERIC files when first beginning their review, Calfee and Drum reported having found more than 25,000 entries identified under the general heading of *reading*. Since that time, the volume of literature has not diminished. To synthesise and evaluate findings from the similarly expanding body of literature related to factors affecting students' reading achievement *per se* is difficult, not only because of the plethora of relationships that have been found, but also because of the range of methodologies that have been employed. Nonetheless, the major factors identified in the literature were classified in four domains: (a) students' cognitive, affective, and behavioral characteristics, (b) sociocultural and home background factors, (c) teacher and/or instructor characteristics, and (d) school organizational and climate characteristics (Rowe, 1991a, 1991b). Some of this literature is reviewed briefly.

From exploratory work in these domains separately and their interactions, many significant associations with students' reading and other academic achievements have long been identified.

Bearing testimony to this is the meta-analytic work of Fraser, Walberg, Welch, and Hattie (1987); Fraser (1989); Hattie (1992); and Walberg (1986); and the work of the International Association for the Evaluation of Educational Achievement (Elly, 1992; Lunberg & Linnakylä, 1993; Postlethwaite & Ross; 1992; Purves, 1973). While there was clearly no lack of empirical evidence, the problem remained one of explicating the observed relationships among factors in *explanatory* terms. Further, since little was known about the relative salience of student, home, and school factors affecting reading achievement, or the impact of teacher and school characteristics and the extent to which these factors are in turn modified and changed by achievement, it was not known which of these factors or combinations might best be enhanced to maximise achievement. Thus, the key task confronting the present study was the identification of *alterable variables* (Bloom, 1980) that may have important implications for both the formulation and implementation of policy and practice.

Given this substantial body of exploratory research related to student achievement, it was considered timely for an *explanatory* study to be undertaken to examine the operation of elements in what Keeves (1986a) refers to as the *cycle of performance*. Moreover, due in part to analytical problems in much of the existing research, the direction of effect relationships among the elements was not clear. A guiding proposition of the study was that it is no longer sufficient to merely report simple bivariate relationships (e.g., coefficients of correlation, regression, or effect size) between given factors and specified learning outcomes. Rather, even at the risk of oversimplification, it was considered necessary to develop *explanatory* models based on substantive theoretical grounds that specify the directions and provide estimates of the effects of critical variables in the *cycle* on student achievement (Rowe, 1989, 1991b). By estimating the extent to which a variable acts either directly or indirectly with other variables to influence achievement, it is possible to gain an understanding of how such variables affect learning and to identify practical intervention strategies.

Major Research Question

It was in this context and in the light of this rationale that the present study addressed the following research question:

> **To what extent are students' reading achievements over time influenced by factors at the student level** (including home background effects, attitudes towards reading, and attentiveness in the classroom)**, at the teacher level** (professional development and teacher affect), **and at the school level** (including school organization, climate, or school ethos factors)?

Four major features of this question should be noted. First, central to the thesis of the present study was the assertion that each of the factors mentioned, and their interrelations, do in fact influence students' reading achievement. The supporting literature for this assertion is considerable; a brief review of which is presented here. Second, given the importance of these factors, explanatory models were proposed and tested for fit to the relevant student and teacher data by applying three statistical modeling techniques: (a) multiple regression models using ordinary least squares estimation (OLS), (b) structural equation models using weighted least squares (WLS) estimation (Jöreskog & Sörbom, 1989), and (c) multilevel models using iterative generalized least squares (IGLS) estimation (Prosser, Rasbash, & Goldstein, 1991). In the attempt to answer the research question, the investigation focused on a comparison of the parameter estimates obtained from fitting these statistical models to the data in terms of their explanatory utility, as well as the substantive implications for interpretation of the findings.

Third, the research question implies that the related data have a hierarchical or multilevel structure, namely, students within classes/teachers within schools. Under such circumstances it is important to account for variability at the student, the class/teacher, and school levels simultaneously, both in terms of explanatory variables at these levels and the extent to which between-class/teacher/school differences may explain variation at the student level. While learning essentially takes place at the student level, the fact that students are grouped into classrooms and schools demands careful estimation of the variation in student achievement that may be due to group membership influences. To ignore the essential hierarchical nature of the sampling structure, typical of much educational and psychosocial research and to assume that the student, teacher, or school alone is the unit of analysis, leads to gross aggregation bias, heterogeneity of regression, and related problems of model mis-specification due to lack of independence between measurements at different levels (Aitkin & Longford, 1986; Bryk & Raudenbush, 1989, 1992; Burstein, 1988; Cheung, Keeves, Sellin, & Tsoi, 1990; Goldstein, 1986, 1987, 1995; Raudenbush & Willms, 1991; Robinson, 1950; Rowe, 1989; Rowe & Hill, 1995).

In particular, failure to account for the essential hierarchical nature of the data is that traditional single-level analyses invariably lead to an increased probability of committing Type I errors (Aitkin & Zuzovsky, 1991; Rowe, 1992a), with important ramifications for the substantive interpretation of findings. Unfortunately, such errors occur all too frequently in educational and psychosocial research. Recent developments in multilevel analysis provide strategies that make allowance for estimating the effects of variables at different levels of analysis simultaneously, thus providing evidence for teacher/program/school effectiveness (Bryk, Raudenbush, & Congdon, 1992; Longford, 1986, 1987; Prosser, Rasbash, & Goldstein, 1991; Rasbash, Goldstein, & Woodhouse, 1995). Moreover, such evidence is likely to have useful implications for educational policy determination and implementation.

Fourth, the longitudinal nature of the project was a crucial design feature of the study. Fundamental questions in education centre upon issues of growth in individual and group learning. Since it is axiomatic that students enter classrooms in schools to learn, grow, develop, and change, the study of growth in student knowledge and skills in schools is of central interest in a considerable body of educational research. However, in spite of the fact that the very notion of *school learning* implies *growth* and *change* in specific organizational settings and such issues fall quite naturally into a contextual and longitudinal framework, the vast majority of research attempts to determine the salience of factors affecting student learning outcomes have ignored the inherent hierarchical structure of the derived data and have been addressed with cross-sectional designs (Burstein, 1980; Goldstein, 1979, 1987; Raudenbush & Bryk, 1988; Raudenbush, 1989; Willett, 1988).

It should be noted that studies of school and classroom effects on student learning share two key features: (a) the fact that student growth is the object of inquiry and (b) the fact that such growth occurs in groups or natural organizational settings (i.e., classes and schools). These two features correspond, in turn, to two of the most troublesome and enduring methodological problems in educational research, namely, the problem of measuring *change* (Harris, 1963; Goldstein, 1979, Linn, 1981; Rogosa & Willett, 1985) and the problem of analysing *multilevel* data (Aitkin & Longford, 1986; Bryk & Raudenbush, 1989, 1992; Cronbach & Webb, 1975; Goldstein, 1987, 1995). Since students are not randomly assigned to either classrooms or schools, the task of measuring change in student growth is problematic if the effects of classrooms and schools are ignored.

A major criticism of research in schools is that most studies have used cross-sectional designs or have employed, at most, two time points. Since these studies are usually nonexperimental, drawing *causal* inferences is particularly problematic in the absence of longitudinal data (Murnane, 1975), since measures of change based on only two time points are notoriously unreliable (Bryk & Raudenbush, 1987; Willett, 1988). The problem is that studies of student growth involve time-series, repeated measures data on students nested within groups, giving rise to difficulties associated with appropriate levels of analysis, aggregation bias, heterogeneity of regression, and problems of model mis-specification mentioned earlier. Further, Nuttall, Goldstein, Prosser, and Rasbash (1989) offer ". . . a note of caution about any study of school effectiveness that relies on measures of outcome in just a single year or of just a single cohort of students. Long time series are essential for a proper study of stability over time" (p. 775).

To avoid these problems, the present study employed a longitudinal, three-wave panel design involving: (a) repeated measures on four cohorts of students nested within classes/schools to estimate their growth trajectories and (b) repeated measures on schools—to evaluate the stability of school effects over time. The second design involved cross sections of student cohorts nested within schools that were changing over time.

At this point, the key terms of the research question are examined briefly within the context of the related research literature as bases for determining the elements of the proposed explanatory models for the student and teacher data to be tested and as pointers for the investigation of school level factors.

Student Home Background Factors

For the past 30 years, the major theories (or models) of learning processes (e.g., Bennett, 1978; Bloom, 1976; Carroll, 1963; Cooley & Leinhardt, 1975) and the *process-product* research generated by them (Brophy, 1986), have primarily focused on *school learning*, or ". . . holistic conceptions of student learning in classroom settings" (Boekaerts, 1986, p. 129). Such is also the case for reading achievement (Calfee & Drum, 1986) despite consistent findings indicating that school factors including financial and material resources, class size, teachers' qualifications, classroom organization, and teaching methods account for less than ten percent of the variation in student achievement measures (Coleman, et al., 1966; Hanusheck, 1981; Glass, Cahen, Smith, & Filby, 1982; Larkin & Keeves, 1984; Thompson, 1985).

Rather, during these 30 years, highly respected researchers such as Coleman et al. (1966) and Jencks et al. (1972) in the U.S.A. and Bernstein (1971), Peaker (1967), and Plowden (1967) in Britain, ". . . provided evidence that schools and teachers are not effective in enhancing achievement" (Hattie, 1992, p. 9). They unanimously asserted that ethnic and family socioeconomic background factors constituted the dominant determinants of students' educational achievement outcomes. In a comprehensive review of studies of educational production relationships covering many different schooling situations, grade levels, and outcome measures, Hanusheck (1985) concluded: ". . . differences in family backgrounds have dramatic effects on student achievement" (p. 4059). For example, Rutter, Tizard, and Whitmore (1970) and Thompson (1985) reported that the cumulative effects of home background factors consistently account for more than 50 percent of the variance in measures of student literacy performance.

Similarly, from several British studies during the mid 1980s, comparisons of the academic outcomes of local education authorities (LEAs) showed that social, ethnic, economic, and environmental factors accounted for up to 80 percent of the variation in student academic attainment (Department of Education and Science, 1983, 1984; Gray, Jesson, & Jones, 1984). In a review of factors underlying the academic success of Indochinese refugee children in the U.S.A., Caplan, Choy, and Whitmore (1992) found that family sociocultural ["collective obligation"] values and ". . . the family's commitment to accomplishment and education . . ." (p. 21) had strong positive impacts on students' achievements in both literacy and numeracy. Similar findings have since been observed in the IEA *Study of Reading Literacy* conducted by the International Association for the Evaluation of Educational Achievement (Elly, 1992; Lunberg & Linnakylä, 1993; Postlethwaite & Ross, 1992). Reynolds, Hargreaves, and Blackstone (1980) summarised such findings in the following terms: ". . . variations in what children learn in school depends largely upon variations in what they bring to school and not on variations in what schools offer them" (p. 208).

A growing number of researchers, however, have since provided contrary evidence to such claims (Bryk & Raudenbush, 1987; Fraser, Walberg, Welch, & Hattie, 1987; Goldstein, 1987; Hattie, 1992; Lee & Bryk, 1989; Raudenbush & Willms, 1991; Reynolds & Cuttance, 1992; Rowe, 1991b, 1992a). Many of these researchers have been critical of findings from studies such as Coleman, Hoffer, and Kilgore (1982) because the inherent hierarchical nature of the data had not been taken into account. For example, from meta-analytic syntheses of 7,827 studies of factors affecting students' educational achievements, Fraser (1989) notes:

> . . . there is little support for the contentions of Jencks et al. (1972) or Coleman et al. (1966) that, relative to home influences, there are no measurable school resources or policies that show consistent relationships to a school's effectiveness in boosting achievement. The effects of the home environment on achievement are neither dramatically more than the effects of the schooling variables, nor do they explain a substantial proportion of the variance. (p. 716)

A major problem in many studies attempting to account for the effects of students' home background factors is the way in which such factors have typically been measured. Whereas numerous studies have included surrogate measures of home background factors, the variables most often chosen have not been measured directly, but rather, have been proxied by other observable attributes such as student self-report estimates of the number of books in the home, access to community and school libraries, and classifications of family social class or socioeconomic status (e.g., Davie, Butler, & Goldstein, 1972; Douglas, 1964; Elly, 1992; Fotheringham & Creal, 1980; McGaw, Long, Morgan, & Rosier, 1989; Postlethwaite & Ross, 1992; Rutter, Maughan, Mortimer, Ouston, & Smith, 1979; Williams & Silva, 1985).

In an Australian study of early reading achievement, the findings of Share, Jorm, Maclean, Matthews, and Waterman, (1983) indicated that the common practice of using proxy measures such as a single index of socioeconomic status (SES) to *measure* home background influences, severely underestimated the relationship between the home and educational achievement. Share et al. showed that although indices of SES were associated positively with reading achievement, specific processes operating within the home such as academic guidance, language models, levels of family literacy, parental participation and aspirations for the child were more directly related to student achievement (Morgan & Lyon, 1979; Topping & Wolfendale, 1985; Winter, 1988). Fraser's (1989) meta-analytic synthesis of related research concluded:

> What might be called 'the alterable curriculum of the home' (e.g., informed parent-child conversations about school and everyday events; encouragement; and discussion of leisure reading; . . . interest in the child's academic progress) is twice as predictive of academic learning as is family SES (p. 711) . . . achievement is more closely linked to family psychological characteristics than to social class (p. 712).

Further:

> . . . this chapter has provided considerable evidence supporting the effect of home environment (especially intellectual stimulation and home interventions) and the class environment (especially cohesiveness, satisfaction and goal direction) in promoting

> learning, thus suggesting the important role to be played by teachers and parents in attempting to enhance student achievement through changing classroom and home environments. (p. 717)

Quality home background influences have also been found to be important in the development of positive attitudes towards reading (Beach, 1985; Caplan, Choy, & Whitmore, 1992; Purves, 1973; Walberg & Tsai, 1985).

Recognition of the value of parents as reading tutors for children has been the subject of considerable interest by researchers and education professionals (Scarborough, Dobrich, & Hager, 1991; Wareing, 1985; Webb, Webb, & Eccles, 1985). First described by Morgan (1976) and Morgan and Lyon (1979), practical implementation of the *Paired Reading* (PR) technique for parents, for example, was outlined more fully by Tizard, Schofield, and Hewison (1982) and studied extensively by Topping and coworkers (Topping, 1986; Topping & McKnight, 1984; Topping & Wolfendale, 1985). A local Australian variant of the PR technique is the *School, Home and Reading Enjoyment* (SHARE) program (Turner, 1987), which appears to impact positively on participating students and their school communities (Jones, 1989). However, a review by Winter (1988) indicated that whatever effects PR has upon reading achievement and attitudes may be due to features far from unique to PR as proposed by Morgan and Lyon (1979) and advocated by Topping (1986). Winter argued that whenever parents are actively involved in their child's education, regardless of specific program-related protocols, educational outcomes are maximised. This view has been supported strongly in a collection of papers published in a special issue of the *Elementary School Journal* edited by Hoffman (1991). Nevertheless, such recognition stands in contrast to the bulk of production-function research concerned with factors affecting student achievement, which typically has not included direct measures of parental involvement or related qualitative aspects of family educational inputs. The same can also be said of the bulk of studies concerned with school effectiveness.

Student Cognitive and Affective Factors

The large literature on student factors associated with reading achievement has focused predominantly on *individual differences* in the cognitive, affective, and behavioral domains, as well as their interactions with presage variables such as gender, race, ethnicity, and socioenvironmental factors. The salient finding from research in the cognitive domain, for example, is that early reading achievement is the major determinant of later reading performance (Beck & Carpenter, 1986; Butler, Marsh, Sheppard, & Sheppard, 1985; Share, Jorm, Maclean, & Matthews, 1984; Stanovich, 1986; Tunmer & Nesdale, 1985). This is especially the case for measures of early phonological awareness which consistently correlate more highly with subsequent reading achievement than do omnibus measures of general intelligence or reading readiness (Mann, 1984; Williams, 1984). Results from studies employing structural equation modeling (Torneus, 1984) show that early phonological awareness skills, mediated by home background influences such as quality parental or other adult inputs, lead directly to later superior reading achievement.

Studies of students' affective characteristics such as attitudes and motivations suggest that favourable attitudes towards reading are related to general success in school and contribute towards positive student self-esteem (Ainley, Goldman, & Reed, 1990; Alexander & Filler, 1976; Beach, 1985; Purves, 1973; Walberg & Tsai, 1985; Weiner, 1984). From Purves' (1973) international study of students' attitudes towards reading, the one factor that contributed most strongly towards positive attitudes was the extent to which opportunity to read was provided and encouraged, both at home and at school. The evidence for home influences appears to be particularly important. When students are read to by parents or other adults during their preschool years, such experiences are associated with subsequent positive attitudes towards reading, increased confidence and motivation to read, and are related to enhanced reading and writing skills (Bettelheim & Zelan, 1982; Grimmett & McCoy, 1980; Scarborough, Dobrich, & Hager, 1991; Spiegel, 1981; Wells, 1986).

Student Behavioral Factors

From the theoretical work of Carroll (1963, 1984), Cooley and Lohnes (1976), and Bloom (1976) has come the key operational construct of *active learning time* or its equivalents, *time-on-task, engaged learning time, perseverance*, or *attentiveness*. These writers argued that although students may differ in their aptitude for learning, the different amounts of time needed to achieve a given level of proficiency is a direct function of the amount of *attention* or effort invested by an individual in a learning task. Findings from related research provide strong support for this view, indicating that *attentiveness* is directly related to achievement outcomes (deJong, 1993; Fisher, et al., 1980; Keeves, 1986b; Lahadern, 1968; Rowe, 1991b; Rowe & Rowe, 1992b, 1992c, 1993). This work suggested that *attentiveness*, defined as: "purposeful activity showing a sustained attention span, perseverance, concentration and not easily distracted" (Rowe & Rowe, 1992a, p. 349), is a crucial variable associated with student behavior at home and at school, through which the effects of learning experiences and attitudes are mediated to influence learning outcomes.

Evidence from studies investigating the impact of maladaptive student behaviors provides strong support for the importance of *inattentiveness* as a major variable having negative effects on student achievement, particularly in literacy. These studies reflect an enduring concern of teachers, parents, and mental health professionals of the extent to which the major characteristics of *externalizing* behavior problems in the classroom—classified as *disruptive behavior disorders* in *DSM-III-R* (APA, 1987) and *DSM IV* (APA, 1994) (i.e., attention deficit/over activity and conduct disorders), adversely affect students' opportunities for learning and educational development.[1] Students whose behaviors are regarded as inattentive, disruptive, or maladjusted have been shown to be at risk of poor educational attainment (Cantwell & Baker, 1991; Davie, Butler, & Goldstein, 1972; Elkins & Izard, 1992; Hinshaw, 1992a, 1992b; Keller, et al., 1992; Maughan, Gray, & Rutter, 1985; McGee & Share, 1988; Rowe & Rowe, 1992a, 1992b, 1993; Rutter, 1985; Silver, 1990). Moreover, in addition to the consequences for an individual, such behavior problems in the classroom diminish educational opportunities for other students and contribute to teacher stress (Brenner, Sörbom, & Wallius, 1985; Otto, 1986; Wearing, 1989). As noted by Hinshaw (1992a), externalizing behavior disorders ". . . are quite refractory to typical interventions and, like severe under achievement, comprise a major psychological, economic, and social problem" (p. 894) (see also Kazdin, 1987; Loeber, 1990; Robins, 1991).

While students' classroom behaviors have been found to be partly dependent on factors such as ethnicity (Dunkin & Doenau, 1985), social background (Kahl, 1985), gender (Bank, 1985), as well as cognitive and affective characteristics (Debus, 1985; Sinclair, 1985), findings from a growing number of correlational studies indicate stronger direct associations between poor attention and reading difficulties—both in general student populations and in identified learning disabled groups (Dykman & Ackerman, 1991; Jorm, Share, Matthews, & Maclean, 1986; Levy, Horn, & Dalglish, 1987; Maughan, Gray, & Rutter, 1985; McGee, Williams, & Silva, 1987; McKinney, 1989; Stanton, Feehan, McGee, & Silva, 1990; Stevenson, Richman,

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[1] The link between academic underachievement and students' externalizing behavior problems has long been noted (Sampson, 1966). For an excellent historical review of this interest and the related research, see McGee, Share, Moffit, Williams, and Silva (1988).

& Graham, 1985). For example, in their longitudinal study in Dunedin, New Zealand, McGee and coworkers have consistently found poor reading achievement to be strongly related to high ratings of inattention. McGee and Share (1988) estimated that 80 percent of their sample of 11-year old children identified with *Attention Deficit Disorder with Hyperactivity* (ADDH), as defined by *DSM-III R* (APA, 1987), had learning disabilities in reading and written language skills. Due, in part, to a variety of methodological and analytical limitations in these studies, however, both the direction and magnitude of *effect* relationships is not clear. For an explication of these limitations, see Rowe and Rowe (1992a).

From interest in the relationship between students' reading disabilities and problem behaviors, Rutter, Tizard and Whitmore (1970) have proposed four alternative *causal* hypotheses, namely: (a) problem behavior leads to reading difficulties, (b) reading disability produces behavior problems, (c) both problem behavior and reading disability are produced by some third factor, and (d) it may be that all of these hypotheses could be partly true. In a review of the related research, McGee, Williams, Share, Anderson, and Silva (1986) noted: "All hypotheses have drawn support from the literature and the proposed mechanisms underlying the relationship between reading disability and behavior disorder appear to be equally plausible" (p. 597).

On the basis of a more detailed review of the literature concerned specifically with the relationship between ADDH and failure to acquire literacy skills, McGee and Share (1988) concluded: "The evidence the authors have reviewed suggests that a substantial overlap exists between ADDH and learning difficulties and that, as yet, no unique pattern of cognitive or attention deficits has been identified that can discriminate between these two types of disorder" (p. 322). (For a detailed discussion, see Fletcher, Morris, & Francis, 1991). Following Kinsbourne (1984), who argued that attention problems are both *context* and *task* dependent, McGee and Share (1988) further concluded that "ADDH behaviors might best be considered as a disorder of conduct in the classroom, because the child with learning difficulties is excluded from much of the normal classroom activity" (p. 322). This view is consistent with the findings of Day and Peters (1989) who suggested that "learning disabled children seem to be better characterized as 'inattentive in the classroom'" (p. 360).

Teacher Professional Development and Affect Factors

As indicated earlier, Australian Government reports on inservice teacher education during the 1980s emphasized the importance of a functional link between teacher professional development (PD) and the quality of educational outcomes for students. While there was an expanding local and international literature espousing the efficacy of inservice professional development for teachers at the time (Eraut, 1985; Freiberg, Prokosch, Treister, & Stein, 1990; Harris & Fasano, 1988; Ingvarson, 1987; Ingvarson & Mackenzie, 1988; Joyce, Showers, & Rolheiser-Bennett, 1987; Joyce & Showers, 1988; Sutton, 1987; Walberg, 1986), there is little evidence for direct effects of teacher PD on student achievement. One exception includes the study by Aitkin & Zuzovsky (1991) which found, using multilevel analysis, that teachers' recent participation in professional development was an important contributor to science achievement for Israeli primary school students drawn from ethnic minority groups.

However, there is growing evidence for the positive effects of PD on teacher affect and changes to their classroom practices (Hill, Holmes-Smith, & Rowe, 1993; Rowe, 1987; Rowe, Hill, & Holmes-Smith, 1994; Rowe & Sykes, 1989; Smylie, 1988). For example, Rowe's (1987) cross-sectional evaluation among teachers trained in the ELIC program documented their claims that participation had markedly improved their competence as "observers of children's learning behaviors," and "notably enhanced their professional repertoires of literacy teaching skills"

(p. 10). Above all, typical of the comments from teachers was: "ELIC has recharged my batteries; my confidence as a teacher has grown dramatically" (p. 10). Similarly, findings from Smylie's (1988) study indicated that the effects of PD impacted positively on changes to teachers' classroom practices and on changes in their professional self-perceptions or "personal teaching efficacy" (p. 25). Using structural equation modeling techniques, findings from Rowe and Sykes' (1989) study indicated strong positive effects of professional development on teachers' professional self-perceptions and particularly those concerned with *energy, enthusiasm,* and *job-satisfaction*. Such outcomes point to a need to determine whether these affects are consistent over time and the extent to which they influence student outcomes.

From the research literature there is some evidence for the effects of teacher behavior on student achievement (Brophy, 1986; Brophy & Good, 1986; Lanier & Little, 1986) and mounting evidence that teachers' self-perceptions and related affective factors (i.e., *efficacy*—Stipek & Weisz, 1981) interact with and impact on their professional practices (Ashton & Webb, 1986; Dunkin & Biddle, 1974; Lee, Dedrick, & Smith, 1991; Levis, 1985; Rosenshine & Furst, 1971; Ryans, 1960). A major proposition at the outset of the present study was that teachers' professional self-perceptions are crucial input components of any attempt to evaluate the benefits of inservice programs or to monitor educational outcomes, since both the identification and evaluation of outputs at the student level are necessarily mediated by the relative saliency of *teacher effects*. That is, since inservice program effects on students are not independent of the mediation effects of teachers who deliver them to students, it is important to examine the relative impact of professional development on teacher affect and to estimate, in turn, teacher affect influences on student outcomes.

School Organizational Factors

During the last decade, there has been a growing body of research suggesting that administrative and social organizational features of schools are important factors influencing both teachers and students (Ainley, Goldman, & Reed, 1990; Lee, Dedrick, & Smith, 1991). The current interest in the effects of school organizational factors, focused mostly on student achievement outcomes, stems mainly from two sources: research on effective schools (for comprehensive reviews, see: Bosker, Creemers, & Scheerens, 1994; Reynolds & Cuttance, 1992; Reynolds, et al., 1994; Rosenholtz, 1985; Scheerens, 1992) and the relative effectiveness of public and private schools (Anderson, 1990; Coleman, Hoffer, & Kilgore, 1982; Lee & Bryk, 1989; Steedman, 1983). In fact, organizational factors are increasingly seen as important determinants of effective schools (Chubb, 1988; Chubb & Moe, 1990; McNeil, 1986; Metz, 1986; Newman, Rutter, & Smith, 1989), with frequently cited features including the school's organizational culture, ethos, or climate (Grant, 1988; Lightfoot, 1983; Rutter, Maughan, Mortimer, Ouston, & Smith, 1979).

Many of these studies, however, have had difficulties in demonstrating direct empirical links between school organization or climate and student outcomes. The reasons for these difficulties are both methodological and substantive (Bidwell & Kasarda, 1980; Bossert, 1988; Ecob, Evans, Hutchison, & Plewis, 1982; Goldstein, 1980; Ralph & Fenessey, 1983; Rowe, 1989, 1992a). Briefly, the methodological difficulties stem from ignoring the essential multilevel nature of data at the student level and higher levels, operationalizing teacher level and school level variables as aggregates, and using these aggregates as explanatory variables in single-level regression models to estimate the magnitude of their effects on student level outcomes. The substantive difficulties arise from a general failure to realise that it is more appropriate to conceptualize the link between schools and students as *indirect*, mediated by teachers (Lee, Dedrick, & Smith, 1991).

According to this view, school organization factors influence how teachers view their work and how they teach. In turn, teachers' perceptions and practices influence students' learning. While strong relationships have been demonstrated between student achievement and teachers' levels of *efficacy* (Ashton & Webb, 1986) and *commitment* (Rosenholtz, 1985), these studies are limited because their analyses did not take hierarchical relationships into account. However, using multilevel modeling, Rowe (1990b) showed that teacher energy/ enthusiasm—due mainly to participation in inservice professional development programs—had significant effects on students' reading achievement.

The most widely cited summarizations of school organizational characteristics as alterable correlates of educational achievement have been provided by Edmonds (1979a, 1979b, 1981), Purkey and Smith (1983), and Tomlinson (1980). A more recent summary has been provided by Levine and Lezotte (1990). Common to each of these summaries, however, is the tendency to produce *recipes* for effectiveness based on disparate and often anecdotal *findings* reported in the literature, rather than on empirical research evidence. Fortunately, a notable exception is the large-scale empirical work of Postlethwaite and Ross (1992), who provide a list of indicators that discriminate between *more effective* and *less effective* schools in students' reading achievement. Nevertheless, the relevant research literature on effective schools is not extensive, with scholarly comment and critique constituting the major proportion and providing the basis for recipe-like systems of performance indicators of the kind proposed by Hopkins (1991) and Scheerens (1993). Lists provided by these commentators illustrate this approach.

Edmonds listed five ingredients of an *effective* school: strong administrative leadership from the principal, high expectations of student achievement, a safe and orderly atmosphere conducive to learning, an emphasis on the acquisition of basic skills, and frequent monitoring of student progress. For a critique of this five factor model, see Scheerens and Creemers (1989). Tomlinson (1980) agreed with Edmonds, but added (among others) efficient use of classroom time involving an active engagement of students in learning activities and the use of parents or aides to help keep students on task. On the basis of a further review of the effective schools literature, Purkey and Smith (1983) provided a *portrait of an effective school* by making a distinction between nine *organizational and structural variables* and four *process variables*, which taken together, define the climate and culture of the school. They asserted that the most important organization-structure variables are: school site management, instructional leadership, staff stability, schoolwide staff development, parental involvement and support, schoolwide recognition of academic success, maximized learning time, and district support.

Purkey and Smith argued that this first group of variables, which can be set in place by administrative and bureaucratic means, precede and facilitate a second group of process variables, namely: collaborative planning and collegial relationships, sense of community, clear goals and expectations, order, and discipline. They noted, however, that although these variables seem to be responsible for a school climate that leads to increased student achievement, it is "... difficult to plant them in schools from without or to command them into existence by administrative fiat" (p. 445). The same can also be said of many conclusions drawn from the research on teacher effectiveness. As Brophy and Good (1986) noted: "... what constitutes effective instruction varies with persons and contexts" (p. 370). Such cautions have important implications for policy. On the basis of an intensive empirical study of models of school effectiveness, Banks (1992) has provided a further note of caution:

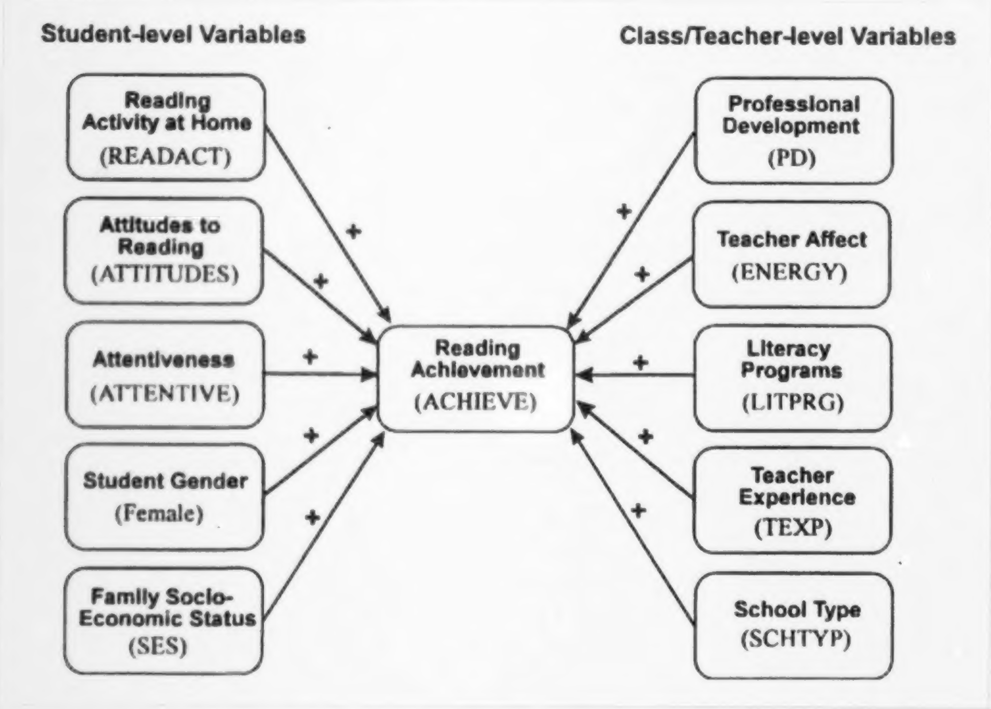
> Research on effective schools is being used to shape major policymaking initiatives in Australia and overseas, even though what makes some schools more effective than others remains an open question. Because clear and unequivocal messages to educators and policymakers are yet to emerge from the research, unquestioning acceptance of the current findings should be a cause for concern. (p. 199)

Due to the magnitude and complexity of such school organizational factors, quantitative data on these factors were not obtained for the present study. Furthermore, the available evidence for the importance of these factors is not specific to reading achievement per se. Rather, on the basis of the student and teacher data, the approach adopted involved the identification of those schools in which students consistently indicated high levels of reading achievement over a three-year period (1988-1990) followed by qualitative field investigations in those schools (1991). These investigations were designed to identify and describe school level characteristics that had positive impacts on students' reading achievements.

The Explanatory Models

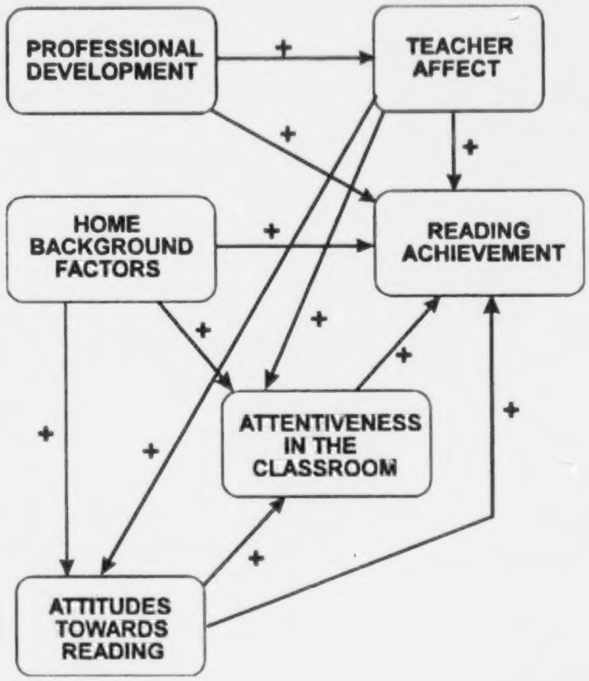
Against this background and in the context of this body of research, the present study was designed to estimate the extent to which students' reading achievements over time are influenced by explanatory factors at the student, teacher, and school levels. To this end, the basic explanatory model tested is schematically presented in Figure 1. This model posits that student Reading Achievement (ACHIEVE) is positively influenced by the effects of five student level variables (Gender [SEX], Family Socioeconomic Status [SES], Reading Activity at Home [READACT], Attitudes Towards Reading [ATTITUDES], and Attentiveness in the Classroom [ATTENTIVE]); and five class/teacher level variables (Teacher Experience [TEXP], Participation in Professional Development [PD], Professional Self-Perception [ENERGY/ENTHUSIASM], whether or not teachers were trained in one or more of three common literacy professional development programs [LITPRG] and School Type [SCHTYP], i.e., government or non-government).

Figure 1. **Schematic representation of the basic explanatory model.**


Student-level Variables
Class/Teacher-level Variables
Reading Activity at Home (READACT)
Attitudes to Reading (ATTITUDES)
Attentiveness (ATTENTIVE)
Student Gender (Female)
Family Socio-Economic Status (SES)
Reading Achievement (ACHIEVE)
Professional Development (PD)
Teacher Affect (ENERGY)
Literacy Programs (LITPRG)
Teacher Experience (TEXP)
School Type (SCHTYP)
+
+
+
+
+
+
+
+
+
+

The preceding model, however, does not allow estimation of the interdependent effects among the factors (constructs). To this end and for substantive purposes, the baseline covariance structure model tested in this study is schematically depicted in Figure 2 and the three-wave, latent longitudinal model is shown in Figure 3.

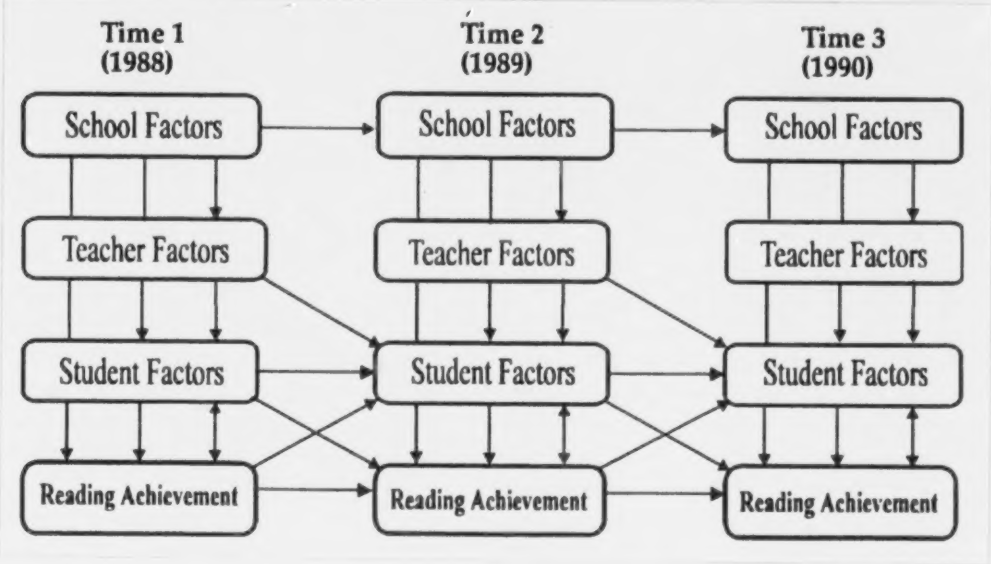
***Figure 2.* Schematic representation of the baseline structural equation model.**



For simplicity, Figure 2 presents the hypothesized structural relationships among the latent constructs of interest at the first time point (baseline). As a means of clarifying the proposed effect relationships, the hypothesized directions of influences are given by unidirectional arrows. Estimation of the effects among the constructs, indicated by plus signs (+) and their relative magnitudes, constituted the initial objectives of the study. At the teacher level, the model posits that teachers' participation in inservice professional development has direct positive effects on their professional self-perceptions (Teacher Affect), which in turn, have positive effects on students' Attitudes Towards Reading, Attentiveness in the Classroom, and on students' Reading Achievement. At the student level, the model posits that Home Background Factors have both direct and indirect positive effects on Reading Achievement, as well as on the mediating latent variables of students' Attitudes Towards Reading and Attentiveness in the Classroom.

Figure 3 presents a schematic version of the proposed three-wave, latent longitudinal model, showing the hypothesized structural relationships among latent factors at the student, teacher, and school levels over three time points (i.e., three years). Several features of this model are worth noting. First, the model requires estimation of the auto regressive effects of the student and school level factors on themselves, over time. Second, the model allows for estimation of the reciprocal effects among the factors. Third, since it is usual for students to be taught by a different teacher each year or by multiple teachers during any one school year, the effects of teacher level variables were estimated at each time point only.

Figure 3. **Schematic three-wave model.**


Time 1 (1988)
Time 2 (1989)
Time 3 (1990)
School Factors
Teacher Factors
Student Factors
Reading Achievement
School Factors
Teacher Factors
Student Factors
Reading Achievement
School Factors
Teacher Factors
Student Factors
Reading Achievement

Method

Design

Based on the major research question, the following sample design procedures were aimed to address the dual needs of the study, namely, (a) to obtain stable cross sectional baseline data and (b) to provide for the conduct of detailed longitudinal investigations. To this end, the present study employed a longitudinal, three-wave panel design involving: (a) repeated measures on five cohorts of students (initially at grade levels 1, 3, 5, 7, and 9) nested within classes/schools, and (b) repeated measures on schools. The second design involved cross sections of students nested within schools that were changing over time. Hence, the design was both longitudinal and cross sectional as illustrated in Table 1.

Sample Characteristics

For simplicity, specific details of the target populations, sampling strata, and design are not reported here, but are available elsewhere (Rowe, 1990c). In brief, the study was conducted in a stratified probability sample of students and their teachers in government, Catholic, and independent elementary and secondary schools, involving a cohort of students initially in Grades 1, 3, 5, 7, and 9 located in four education regions (two metropolitan and two rural), within and without the teacher professional development literacy programs of interest, (i.e., ELIC, LaRIC, CLIC, and Reading Recovery).

Table 1
Sample Cohorts by Grade Level and Date

Date	Grade Levels										
	Cohort 1		Cohort 2		Cohort 3		Cohort 4		Cohort 5		
1988	1		3		5		7		9		
1989		2		4		6		8		10	
1990	1		3		6		7		9		11

* *Note.* In 1990, for each of the participating schools, an additional class of Grade 1 students was included in the elementary school sample, and a further class of Grade 7 students was added to the secondary school sample. The reason for these additions was to examine the cross-sectional stability of within-school effects on students' reading achievements.

The sample design procedures were aimed to address the dual needs of the study, namely, (a) to obtain stable cross sectional baseline data and (b) to provide an opportunity for conducting detailed longitudinal investigations. Thus, the sample design employed within each of the sample strata was a three-stage cluster design in which schools were selected with probability proportional to their enrollment size (PPS) at the first stage, one intact class selected randomly (at each grade level) within each selected school at the second stage, and all students in the selected classes were included at the third stage. On the basis of an estimated intraclass correlation of 0.2 and an average cluster size of 20, the level of sampling precision within each stratum involved the specification of sampling tolerances of ± 5 percent for 95 percent confidence limits (Ross, 1988a, 1988b). To satisfy these sampling error constrains, it was calculated that a designed sample of at least 164 classes, each of ≥ 20 students would be required (i.e., $n = 164 \times 20 = 3280$). However, given the longitudinal nature of the study and the potential sample and data attrition over time, a more generous target sample of 280 classes (i.e., 5,600 students) was drawn.

Procedure and Measures

Following invitations to sampled schools and their parent communities to participate in the project, pre-study briefing sessions for teachers from those schools were held to provide detailed information about the objectives, design, and administrative requirements of the study and to distribute the relevant data-gathering instruments. Two major instruments were used, both in the form of questionnaires. A similar procedure was used prior to each of the three subsequent data-collection stages.

Student Level Variables

On a Student Record form, two sets of indicators of home background factors were recorded. First, with the informed consent and cooperation of parents, family socioeconomic indicators (SES) were obtained which included: the number of years of mother's education, father's education, and mother's and father's occupational classification—as measured on the Australian Bureau of Statistics 8-point scale (Castles, 1986). Second, a measure of students' Reading Activity at Home (READACT) was obtained from self-report responses on three Likert-type items, each measured on 4-point rating scales: (1) "Do you read books, magazines, or

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newspapers at home?" (2) "Do any of your family or friends read books or stories to you?" (3) "Do you talk about books or stories you have read with your family or friends?" For each item, students were asked to respond in one of the following categories: Never, Not Very Often (defined as: once or twice per month), Often (once or twice per week), Every Day (coded 0 - 3, respectively). Student Gender (SEX) was coded 1 for females and 0 for males. Additional sociodemographic data included: country of birth for student, mother and father; the number of years student has lived in Australia; the number of persons who live in the student's residence; and the extent to which English is spoken at home (five indicators).

Students' Attitudes Towards Reading (ATTITUDES) were indicated on three items: (1) "Do you ENJOY reading?" (2) "Do you find reading USEFUL?," and (3) "How WELL can you read?"— each measured on 5-point ordinal scales: *Not at all, Not very much, Moderately, Quite a lot,* and *Very Much* (coded 0 - 4). In the event that some students had difficulty with reading and/or understanding the self-report items, teachers used the response form as an interview schedule to assist students in making their responses.

Table 2
Items Measuring Attentiveness in the Classroom

1. Cannot concentrate on any particular task; easily distracted	•	•	•	•	•	Can concentrate on any task; not easily distracted
2. Perseveres in the face of difficult or challenging work	•	•	•	•	•	Lacks perseverance; is impatient with difficult or challenging work
3. Persistent; sustained attention span	•	•	•	•	•	Easily frustrated; short attention span
4. Aimless activity	•	•	•	•	•	Purposeful activity

On a Teacher Record form, a measure of students' Attentiveness in the classroom (ATTENTIVE) was obtained from four teacher rated items each measured on 5-point ordinal scales following the bipolar format advocated and used by Kysel, Varlaam, Stoll, and Sammons (1983). The psychometric characteristics of this domain and its constituent items for the present sample have been reported by Rowe and Rowe (1989, 1993). On the scale provided for each paired behavioral statement, teachers were asked to mark a category nearest to the statement which best describes typical behavior of the student. The relevant items are shown in Table 1. Scores on each item were coded 1 - 5, from negative to positive behavior.

Reading Achievement (ACHIEVE) was assessed in two ways: (a) scores on a criterion/domain-referenced reading comprehension test and (b) teacher ratings on a criterion-referenced profile of student reading behaviors.[2] For 5-6 year old students, the Primary Reading Survey

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[2] In the design of this study a conscious decision was taken to not depend primarily on standardized test results to measure students' reading achievement. Whereas the use of such tests for the measurement of learning outcomes is typically justified on the grounds of maximum reliability, this has often been at the expense of validity. Moreover, there has long been criticism of the utility of such tests as measures of either learning or competence (e.g., Darling-Hammond, 1994; Frederiksen, 1984; Lacey & Lawton, 1981; Linn, 1986; Newmann & Archibald, 1990; Wigdor & Garner, 1982). Such criticism has since gained credence in the areas of standards monitoring and performance assessment, where new approaches to obtaining more curriculum-specific and *authentic* (Wiggins, 1989) measures of assessment are being tried (Lesh & Lamon, 1992; Moss, 1994; Murphy, 1990; Nisbet, 1993; O'Connor, 1992; Resnick & Resnick, 1992; Shavelson, 1994; Taylor, 1994), but it is a criticism that has been largely ignored in almost all studies of factors affecting student learning outcomes.

Test, Level AA (ACER, 1979) was administered. For older students, selected sub-tests from the *Tests of Reading Comprehension* (TORCH) battery (Mossenson, Hill, & Masters, 1987) were administered. The TORCH tests are a set of 14 untimed reading tests for use with students in Grades 3 to 10 that assess the extent to which readers are able to obtain meaning from text. These tests use an item-response modeling (IRM) approach (Masters, 1982) that provides vertically calibrated estimates of reading ability on a common scale that ranges from zero to 100. Such tests have particular advantages in a study of the present kind since they allow meaningful comparisons to be made across age groups and over time.

All students were rated by their teachers on the English Profiles—*Reading Bands* (Victoria, 1991)—a developmental, IRM-scaled inventory of nine bands (labeled A-I), each consisting of multiple indicators describing reading behaviors. A full account of the development of the Reading Bands is given by (Griffin, 1990; Griffin & Jones, 1988; Griffin & Nix, 1991; Rowe, Hill, & Holmes-Smith, 1994). For each band of indicators, students were assigned a score of: (0) for no evidence, (1) beginning, (2) partial, and (3) for complete evidence—that the indicators listed are consistently displayed by the student. The ratings for each band were added together to give a total score out of 27.

A key assumption underlying the English Profile Reading Bands is that they form a cumulative scale similar to that described by Guttman (1944). Using the Guttman method of scaling, lower bound estimates of *true reliability* for the Reading Bands were computed for large samples of students at each year level (Preparatory - K to Grade 11) and are summarised in Table A1 of the Appendix. The results indicate that the profiles do function as cumulative scales or growth continua and that teachers are consistent in their use of the scales. Further evidence regarding the reliability of teacher assessments using the Reading Bands of the Victorian English Profiles is available in the form of test/retest reliabilities and interrater reliability estimates. These are summarised in Table A2 of the Appendix. The limited evidence regarding interrater reliability shown in the third column of Table A2 are Pearson product-moment correlations between the ratings of two or more teachers who rated the same student. These data derived from naturally occurring instances (mostly team-teaching situations) in which two or more teachers in the same school were able to provide an assessment of the same student. The results indicate a satisfactory level of interrater reliability among teachers. Prior to administration, pilot versions of all instruments were extensively trialed in schools to check on validity and reliability, the results of which were used to refine item content, nomenclature, and presentation format.

Class/Teacher Level Variables

Teachers were asked to respond to a pre-trialed questionnaire instrument designed to obtain information about: Background Training and Experience; Professional Development, Professional Self-Perception, and several literacy-focused aspects related to Teaching Practices and Resources. Of immediate concern to this report, Teacher Experience (TEXP) was measured in terms of the number of years of full-time service. Information about Professional Development (PD) was gained from three questions:

1. How many professional development inservice programs have you attended in the last three years which have involved language and literacy learning?
2. How many inservice programs, other than those related to literacy, have you attended in the last three years?
3. In general, to what extent has your professional development as a teacher been enhanced by participation in inservice programs?

The third question invited teachers to respond in one category of a five-point Likert-type scale, ranging from *Not at all* to *Very much*.

Measures of teachers' Professional Self-perception were obtained from responses on a semantic differential instrument consisting of 34, seven-point evaluative scales adapted from the Professional Self-Perception Questionnaire developed by Elsworth and Coulter (1977). On the adapted semantic differential instrument used in the present study, teachers were required to provide a self-rating on each scale in terms of *myself as a teacher*. From a five-factor solution of 273 teacher responses on this instrument, Rowe and Sykes (1989) found that the first factor (Energy/Enthusiasm) accounted for 47.2 percent of the total variance, while the remaining four factors accounted for only 20.8 percent of the variance between them. To illustrate the relevant items, Table 3 presents those items specifically related to the Energy/Enthusiasm scale.

Table 3
Self-Report Items Measuring Teacher Energy/Enthusiasm

unenthusiastic	•	•	•	•	•	•	•	enthusiastic
burnt-out	•	•	•	•	•	•	•	energized
indifferent	•	•	•	•	•	•	•	eager
unfulfilled	•	•	•	•	•	•	•	fulfilled

Two further variables at the class/teacher level were considered. First, a dummy variable (LITPRG) was included to indicate whether or not teachers of the intact classes in the sample had been trained in one or more of the common literacy professional development programs (coded 0 for not trained and 1 for trained). Second, a further dummy variable (SCHTYP) was included to indicate *School Type* (coded 0 for government schools and 1 for non-government schools). Although this indicator is strictly a school level variable, it was treated as a class/teacher level variable.

Analyses

In fitting the single-level and multilevel explanatory models as illustrated schematically in Figure 1 and Figure 3, maximally reliable composite scores for multiple-indicator variables at the student level (i.e., SES, READACT, ATTITUDES, ATTENTIVE, and ACHIEVE) and at the class/teacher level (PD, ENERGY) were calculated. These scores and their reliabilities were obtained from fitting one-factor congeneric measurement models to the relevant ordinal-scaled indicator items for each construct. In so doing, use was made of a weighted least squares (WLS) method of parameter estimation, fitted to the appropriate polychoric intercorrelation matrix and an asymptotic covariance matrix of these correlations using PRELIS (Jöreskog & Sörbom, 1988) and LISREL 7 (Jöreskog & Sörbom, 1989). For specific details of these well-established procedures, the reader is referred to Alwin and Jackson (1980), Brown (1989), Fleishman and Benson (1987), Jöreskog (1971), Munck (1979), and Werts, Rock, Linn, and Jöreskog (1978). Further details including the rationale for this approach to computing composite variables and their reliabilities have more recently been outlined and demonstrated by Hill, Holmes-Smith, and Rowe (1993) and by Holmes-Smith and Rowe (1994).

For explanatory models of the kind illustrated by Figure 2, simultaneous estimation of the measurement properties of the observed indicators and the structural relationships among their associated latent variables were undertaken using LISREL 7 (Jöreskog & Sörbom, 1989). In fitting these models, use was also made of the relevant polychoric/polyserial intercorrelation matrices and their asymptotic covariance matrices using PRELIS (Jöreskog & Sörbom, 1988).

Specific technical details and results of fitting these models to the present data are given in Rowe (1991b) and Rowe and Rowe (1992a, 1992b, 1992c).

Estimates of the proportion of variance in students' reading achievements due to the clustering of students within class/teachers were obtained from fitting multilevel variance-components models to the data using *ML3* (Prosser, Rasbash, & Goldstein, 1991).

Major Findings and Their Implications

Achieved Sample

Of the 100 schools originally invited to participate in the study in 1988, data were received on 5,092 students from 92 schools (72 elementary; 15 secondary, five P-12), including 64 government schools and 28 non-government schools. Frequency details of the achieved student sample by school type, age group, and gender are shown in Table 4. Thus, from a target sample of 280 classes and 5,600 students, data were received from 256 classes on 5,092 students, representing 91 percent of the target sample. Complete data for the four age groups of students were obtained as follows: 5-6 years (n = 1,368), 7-8 years (n = 1,350), 9-11 years (n = 1,329), and 12-14 years (n = 732). Complete data were also obtained from 273 teachers of these students, with a mean teaching experience of 13.5 years (range = 34, *SD* = 8.0).

One hundred thirty teachers had been trained in one or more of the literacy, inservice professional development courses of interest. With reference to sampling accuracy, the standard errors of the mean values for each of the response variables of interest for both students and teachers during 1988, and since, have not exceeded ± 3.1 percent, which has been well within the designed five percent limit of the targeted population values for determining the sampling frame.

Table 4
Details of Student Sample by School Type,* Age Cohort, and Gender**

	Age Cohort									
School Type	5-6 Years		7-8 Years		9-11 Years		12-14 Years		Totals	
	F	M	F	M	F	M	F	M	F	M
Gov Elem	519	448	497	467	476	496			1492	1401
NG Elem	221	203	304	217	200	222			725	642
Gov Sec							264	310	264	310
NG Sec							133	125	133	123
Totals	740	651	801	684	676	708	397	435	2614	2478
	1391		**1485**		**1384**		**832**		**5092**	

* Gov = Government School; NG = Non-government school; Elem = Elementary; Sec = Secondary
** F = Female student; M = Male student

Data obtained on student family sociodemographic variables indicated that 94.3 percent of the sample were born in Australia, a further one percent were born in the British Isles, one percent from South East Asia, with the balance being made up of students born in Southern Europe, Middle Eastern, and South American countries. The mean number of equivalent full-time years of parents' education was: for mothers (*mean* = 11.6, *SD* = 2.9) and for fathers (*mean* = 12.0, *SD* = 3.4). The data on parents' occupational classifications indicated that the proportions obtained in each of the eight categories were within 95 percent confidence limits for the Australian adult workforce population (Castles, 1986).

For ease of presentation and interpretation, the major findings from the study are reported at each of the levels of analysis, namely, the student level, the teacher level, the combined student and teacher levels, and at the school level. Further, to assist the reader, the results are reported mostly in summary form using graphs and diagrams rather than in tables, showing overall findings rather than those for each of the four age groups separately—except in those instances where tabulated presentations better illustrate the relevant findings. More comprehensive technical details related to the data and findings are available from the papers published to date (Rowe, 1990a, 1990b, 1991b; Rowe & Rowe, 1992a, 1992b, 1992c; Rowe & Sykes, 1989).

Student Level Results

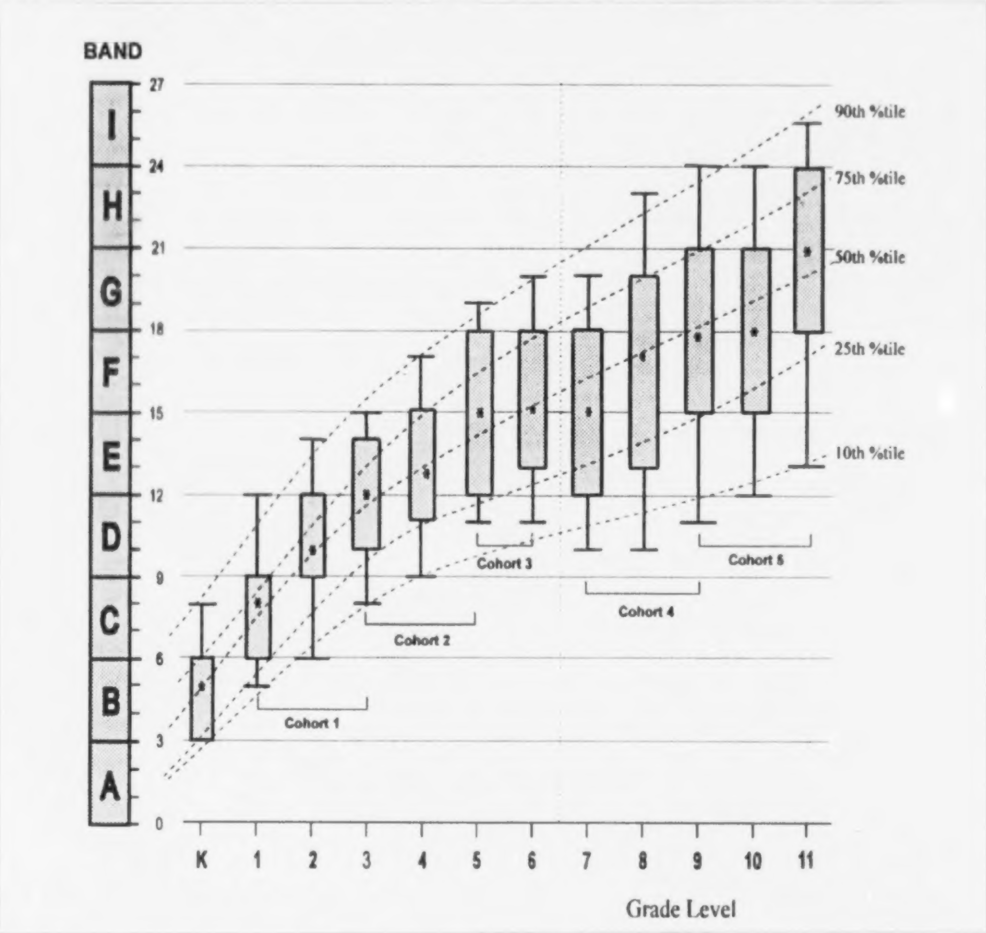
There was positive growth in reading achievement for each of the age cohorts of students. Figure 4 summarizes this growth on the *Reading Profile Bands* using box-and-whisker plots (Tukey, 1977) to describe the *shape* of the distributions for each grade level. The shaded boxes represent the range of achievement for the middle 50 percent of students, with the bottom of each box indicating the 25th percentile and the top of each box showing the 75th percentile. The asterisk in the middle of each box represents the level of achievement for students at the 50th percentile (median). The bottom whisker shows the level of achievement of the 10th percentile, while the top whisker shows the 90th percentile. Lines of best fit have been drawn on each graph for the 10th, 25th, 75th, and 90th percentile values, respectively.

The distributions indicate a period of rapid growth during the first few years of schooling, coinciding with the period during which young people acquire basic literacy skills and thereafter show a consistent rate of growth up to Grade 9. It is noticeable, however, that the range of reading achievement increases markedly over the years of schooling, with more than four band widths separating Grade 9 students at the 10th and 90th percentiles. Of particular concern is the flattening out of the growth trajectory at the 10th percentile, indicating a trend of less than one band width of growth between Grades 4 to 9.

Figure 4 also provides evidence of a discontinuity between elementary and secondary schooling for reading achievement, with a dip in the rate of progress of students in the first year of secondary school (Grade 7). This pattern has been observed frequently in previous studies using common measures over elementary and secondary schooling. Perhaps the most striking feature of this pattern is its similarity with that shown by pediatric percentile growth charts for height and weight during the prepubertal to early adolescent transition period. It is possible that what has become known as an *educational phenomenon* may also have developmental psycho-physiological correlates.

The findings related to students' progress on the Reading Profile Bands over time have been particularly useful in the development of benchmarks' for the expected range of student achievement in reading. Using the data from the Literacy Programs Study for teachers' assessments of student progress on the *Reading Profile Bands* (from Grade 1 to Grade 11), recording sheets for *Records of Achievement* (see Broadfoot, 1986) and for reporting to parents have been constructed. These recording sheets were constructed using the nutshell statements contained in the *English Profiles Handbook* (Victoria, 1991).

Figure 4. **Students' progress in reading on the Victorian *Reading Profile Bands*.**



Note. Data for the Preparatory Grade (K) sample (n = 2280) were obtained from a further study reported by Rowe, Hill, and Holmes-Smith (1994). These data have been included here for completeness.

To determine the proportions of unique variance in Reading Achievement (ACHIEVE) accounted for by the home background measures (i.e., SES and READACT),[3] students' Attitudes Towards Reading (ATTITUDES), and Attentiveness in the classroom (ATTENTIVE), the composite scores for students' Reading Achievement (ACHIEVE) were regressed onto each linear combination of the relevant manifest (composite) variables. The results of these analyses for the four age groups are presented graphically in Figure 5.

From the data summarized in Figure 5, it is clear that the family SES variables (i.e., mother's education [MEDUC], father's education [FEDUC], and father's occupation [FOCC]) account for very small proportions of the variance in students' reading achievement, ranging from 0.3 percent (7-8 year group) to 3.2 percent (12-14 year group). The correlations between SES and ACHIEVE were likewise very small (5-6 years, r = 0.096; 7-8 years, r = 0.048; 9-11 years, r = 0.070; 12-14 years, r = 0.053).

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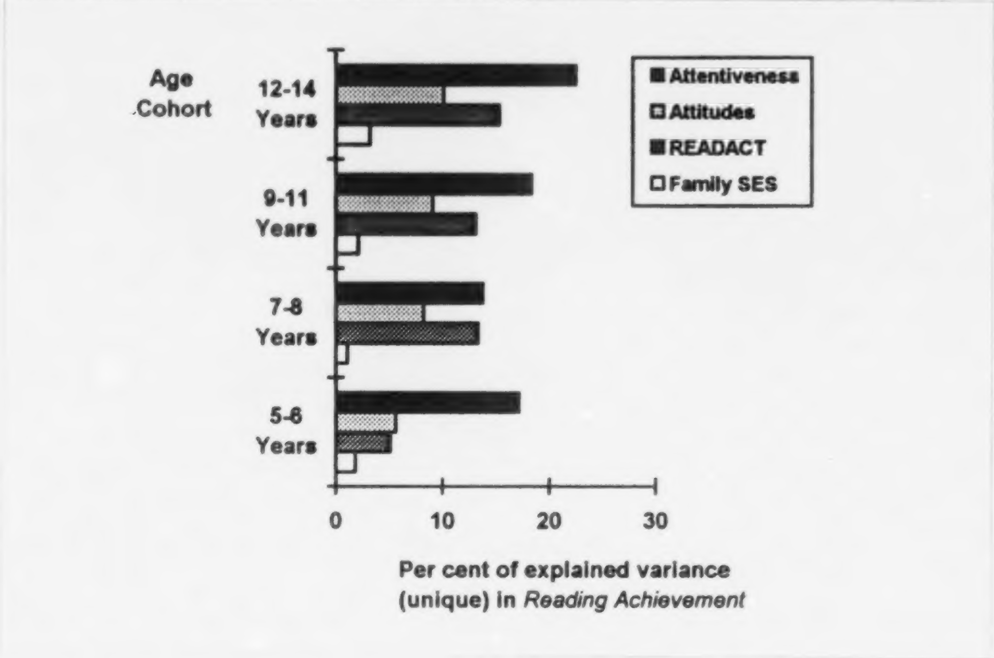
[3] Since 48 percent of mothers indicated *Home Duties*, mother's occupation was excluded from the estimation of family SES. Further, separate analyses for female and male students in each age group were computed, but are not presented here. While there were significant gender differences in favour of girls on all variables (with the exception of SES variables), the magnitudes of the intercorrelation estimates were very similar.

Figure 5. **Percentage histogram showing proportions of explained variance (unique) in Reading Achievement for four factors by age cohort.**



The comparative contributions of each SES indicator towards Reading Achievement are shown in Table 5. These findings indicate that the best positive predictors are MEDUC and FOCC, but that in general FEDUC is a negative predictor. This result suggests that students' Reading Achievement is positively influenced by mothers' inputs and possibly by family income (from fathers' occupational status), while fathers appear to spend less qualitative time with their children in respect of reading activities. By comparison, the home background variable of Reading Activity at Home (READACT) contributes strongly to the proportion of variance in students' reading achievement, for each of the four age groups (see Figure 5). Although students' Attitudes Towards Reading also contribute positively towards their reading achievement, the strongest influence, regardless of age group, is from Attentiveness, ranging from 13.4 percent (7-8 year group) to 22.9 percent (12-14 year group).

With the student as the *unit of analysis* (for illustrative purposes here), the magnitude of the influences of home background factors (i.e., family SES and Reading Activity at Home) on Reading Achievement, as well as on the mediating variables of students' Attitudes Towards Reading and Attentiveness in the classroom were assessed using structural equation modeling (i.e., Jöreskog & Sörbom, 1989). For simplicity of presentation, the findings are summarized in the explanatory model depicted by Figure 6.1. (Note: The plus signs [+] indicate the relative magnitude(s) of the effect(s) among the latent constructs).

These findings indicate that regardless of age and gender, family socioeconomic status has little direct or indirect influence on students' Reading Achievement. However, Reading Activity at Home has significant, positive influences on Achievement, as well as on the mediating variables of Attitudes Towards Reading and Attentiveness in the classroom. In fact, the magnitude of the effects of READACT on ACHIEVE increase across the age groups, suggesting that

Table 5

Regression of Reading Achievement on Family SES Variables[a] Showing Parameter Estimates (b) and Standard Errors (S.E.) for Four Age Cohorts[b]

Age Cohort	Statistic	MEDUC	FEDUC	FOCC	R^2	% of Variance
5-6 Years	*b*	0.083*	-0.024	0.005	0.010	1.0
(n = 1368)	*S.E.*	0.035	0.036	0.029		
	T-value	2.384	-0.068	1.902		
7-8 Years	*b*	0.001	0.054	-0.013	0.003	0.3
(n = 1350)	*S.E.*	0.034	0.035	0.029		
	T-value	0.009	1.529	-0.460		
9-11 Years	*b*	0.089*	-0.036	0.104*	0.018	1.8
(n = 1329)	*S.E.*	0.035	0.036	0.029		
	T-value	2.518	-1.004	3.625		
12-14 Years	*b*	0.119*	-0.123	0.156*	0.032	3.2
(n = 732)	*S.E.*	0.047	0.049	0.039		
	T-valued	2.524	-2.536	3.968		

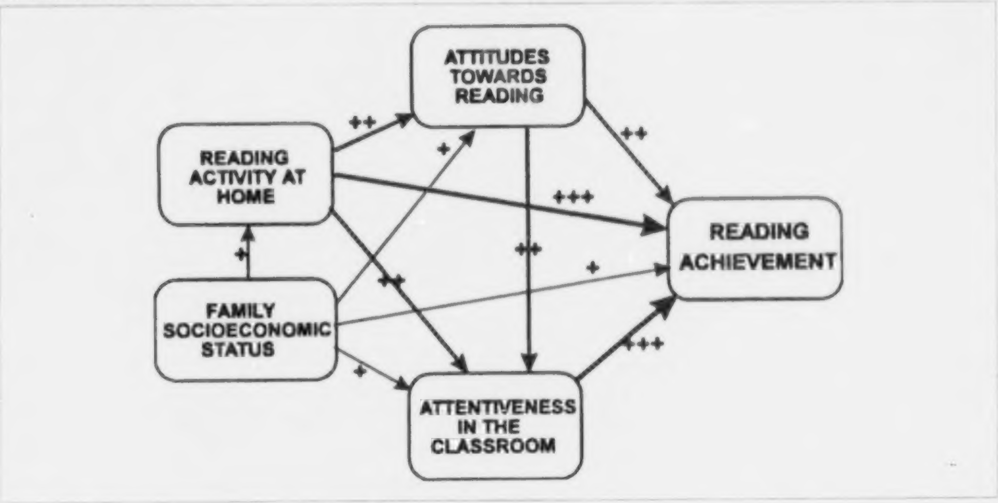
Note. The multiple R^2 values are adjusted for the degrees of freedom

* Significant beyond the $p < 0.05$ level by univariate 2-tailed test

[a] MEDUC - Number of years of mother's education
FEDUC - Number of years of father's education
FOCC - Occupational classification on 8-point ordinal scale

[b] Age cohorts with complete data

***Figure 6.1.* Schematic structural equation model showing the effects of home background factors on reading achievement, mediated by attitudes towards Reading and Attentiveness in the classroom.**


ATTITUDES TOWARDS READING
READING ACTIVITY AT HOME
READING ACHIEVEMENT
FAMILY SOCIOECONOMIC STATUS
ATTENTIVENESS IN THE CLASSROOM
++
+
++
+++
++
+
+
++
+
+++

Reading Activity at Home has an increasing influence on achievement as students progress through elementary and secondary schooling (see Rowe, 1991b). Moreover, there is a strong positive interdependence between students' Attitudes Towards Reading and Reading Activity at Home, both of which have significant positive influences on achievement. The strong positive associations between Attitudes and Attentive behaviors in the classroom underscore the importance of Reading Activity at Home as a powerful influencing variable.

Results related to the magnitude of the reciprocal effects between Reading Activity at Home and achievement, show that the effects are interdependent. That is, while achievement does have significant, positive influences on Reading Activity at Home (for all student age groups), the influence of Reading Activity at Home on achievement is notably stronger (Figure 6.2). Similarly, the findings indicate a strong reciprocal relationship between Attentiveness and reading achievement (Figure 6.3), suggesting that while inattentive behaviors lead to reduced reading achievement, reading achievement—mediated by attitudes and reading activity at home—leads to increased Attentiveness in the classroom, to the benefit of all concerned (Rowe, 1991b; Rowe & Rowe, 1992b).

***Figure 6.2.* Schematic structural equation model showing the reciprocal effects between reading activity at home and reading achievement, mediated by attitudes and attentiveness in the classroom.**

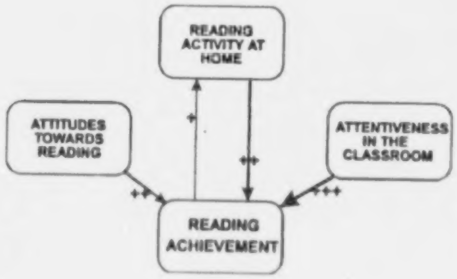
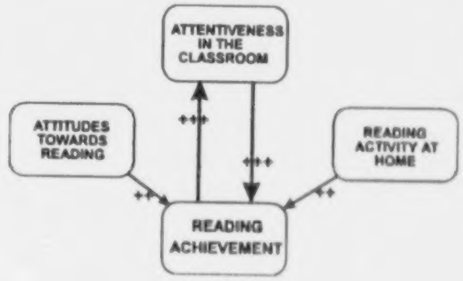


***Figure 6.3.* Schematic structural equation model showing the reciprocal effects between attentiveness in the classroom and reading achievement, mediated by attitudes and reading activity at home.**



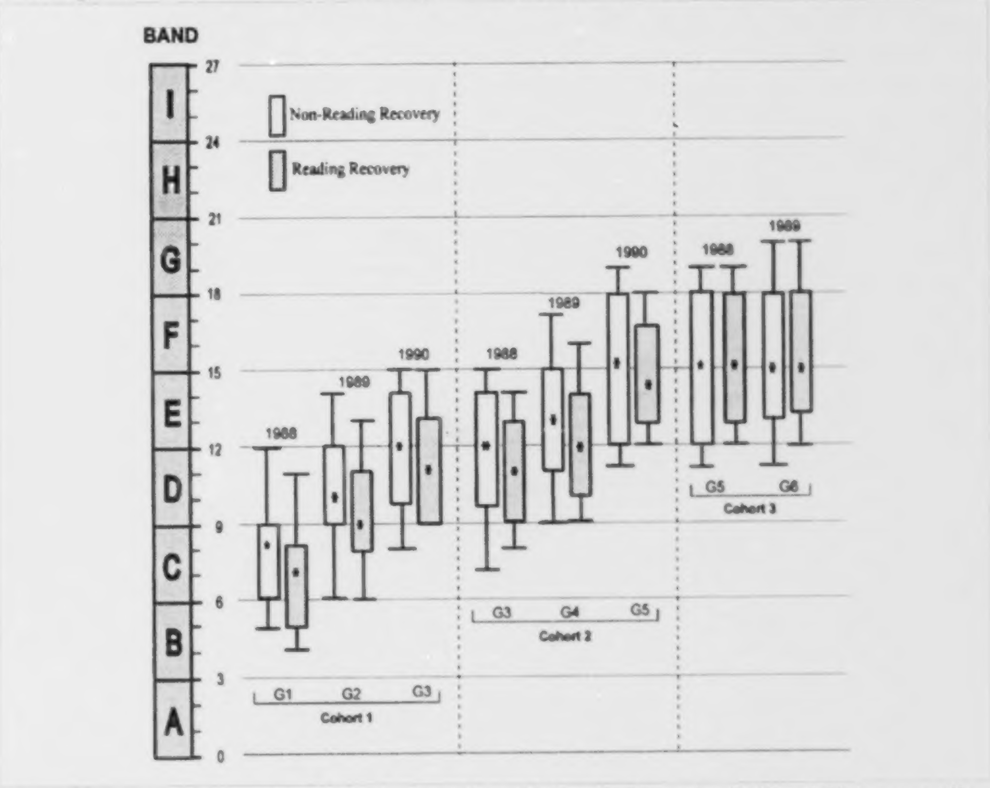
Literacy Program Effects

A major aim of the present study was to examine the impact of teacher professional development literacy programs (LP) such as ELIC, LaRIC, CLIC, and Reading Recovery on students' reading development over time. The numbers of students whose teachers had been trained in the literacy programs of interest at the outset of the study (1988) indicated that 53 percent of the sample of students in government schools and 41 percent of students in non-government schools were taught by teachers who had been trained in at least one of these programs.

In general, students' reading achievement measures (on the tests of reading comprehension and the Reading Profile Bands) for those taught by LP trained teachers did not differ significantly from those taught by non-LP trained teachers. This finding suggests that, independent of teacher exposure or non-exposure to specific Literacy Programs, students' achievements in reading appear to be relatively uniform. While there was strong evidence of significant improvement in the reading achievement measures for all students over the three data-collection stages of the study, there was greater variability in the range of achievement measures of students taught by LP trained teachers compared with those of students taught by non-LP trained teachers. One exception to this finding was that for those students who had participated in a Reading Recovery (RR) program (147), the variation (range) of RR students' test and profile scores were smaller than those of their non-RR peers. This finding suggests that the Reading Recovery program (Clay, 1985) appears to be meeting its intended purposes for those students involved.

The data summarized in Figure 7 for Reading Recovery and non-Reading Recovery students on the Reading Profile Bands indicate that although the reading achievement distributions of those students who had participated in a Reading Recovery program were generally lower than those of their non-RR-exposed peers, the lower limits of the distributions for the achievement measures are higher. These findings indicate that those students who had been identified as readers at risk and placed in a RR program have benefited notably from participation. In fact, some RR students were achieving beyond the 80th percentile level of their non-RR-exposed peers. Moreover, in spite of the small numbers involved, the earlier gains made by RR students who were in Grades 5 and 6 during 1988 and 1989 appear to have been sustained.

Figure 7. **Box plots showing distributions on the Victorian Reading Profile Bands for three age cohorts of Reading Recovery and non-Reading Recovery students.**



Note. 50 percent of cases lie within the box; the whiskers indicate the 10th and 90th percentiles, respectively; *indicates the 50th percentile (median value).

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Policy Implications

Above all, the results provide strong empirical support for the benefits of Reading Activity at Home, regardless of family socioeconomic status and the related value of recognising the important contributions which parents can make to the educational development of their children. Moreover, these effects have been stable over time (1988-1990). From a more detailed analysis of the READACT items, it is disappointing that so many students in the 5-6 and 7-8 year-old groups indicate that they never or rarely share reading activities with family members or friends. For students in these age groups, high scores on the reading alone item and the shared reading items in particular are strongly associated with positive attitudes towards reading, high levels of attentiveness in the classroom, and high scores on the measures of reading achievement. For older students, related positive associations are mainly with reading alone and discussing reading. This latter finding suggests that, while students may spend less time reading to others and being read to by others as they become independent readers, it is clearly in their interest to participate in activities which encourage discussion of reading materials, both at home and at school.

Given the importance of either direct or indirect parental involvement in students' educational progress, it is clear that the work of schools needs the support of programs designed to assist parents to take an active role in the development of their child's reading skills. The results show that it is important that school based measures to prevent early reading difficulties (such as the Reading Recovery program [Clay, 1985]) should be coupled with an early intervention program designed to encourage and assist parents, where necessary, to take an active role in partnership with teachers. Findings from the study suggest, however, that parental literacy is likely to have a significant impact on such a role. In this context, government policy has a major role to play. Programs of the type which provide opportunities through which both parent and child literacy are enhanced would appear to have particular merit.

In view of the salience of the reciprocal relationship between attentiveness and reading achievement, at least two directions for appropriate classroom management and intervention/treatment are suggested. First, given the mutuality of learning outcomes and behavior, there is a clear need to focus intervention strategies in both domains simultaneously (Rowe & Rowe, 1992b). Second, there is a clear need to enhance the positive mediating effects of home inputs on students' attitudes, achievement, and attentiveness in the classroom (Rowe, 1991b) or *time on task* (Carroll, 1963, 1984).

Teacher Level Results

A central aim of the project was to examine the nature and impact of teacher inservice literacy programs such as ELIC, LaRIC, and RR on students' reading achievements over time. Following Elsworth and Coulter (1977), it was argued that the notion of change in professional self-perception and level of adjustment holds particular promise as a criterion for judging the effectiveness of teacher inservice training programs. Further, apart from its influence on performance, changes in self-perception (mediated by participation in professional development) may provide useful indicators of teachers' adjustment to professional role demands. Where teachers aspire to be professionally competent and also perceive themselves to be professionally competent, they may then be regarded as *well adjusted* in the sense of being able to realise their professional aspirations, rather than being thwarted or frustrated. What is suggested here is that "if . . . teachers are to self-actualize in their professional roles, they should not only possess that knowledge and skill regarded as necessary for competent role performance; they should also see themselves as competent" (Elsworth & Coulter, 1977, p. 4).

That is, on the one hand, inservice training programs should provide teachers with opportunities to develop professional knowledge and skills, and on the other, assist in the development of a positive professional self view.

From factor analyses of the 34-item *Professional Self-Perception Questionnaire* (Elsworth & Coulter, 1977) used in the study, five stable dimensions of teachers' professional self-perceptions have been consistently identified: *Energy/Enthusiasm, Orderliness, Warmth and Supportiveness, Creativity*, and *Clarity*. The first factor (Energy/Enthusiasm) accounted for the largest proportion of the variance by far (47.2 percent), while the remaining four factors accounted for only 20.8 percent of the total variance between them. This finding suggests that Energy/Enthusiasm-related indicators are the most consistent and salient concerns of teachers in terms of professional self-perception. (For specific technical details of these findings, see Rowe & Sykes, 1989).

To examine differences on the five affect dimensions for teachers trained and not trained in literacy inservice programs (i.e., ELIC, LaRIC, CLIC, RR), both univariate and multivariate analyses were computed. The results showed significant positive differences in favour of teachers trained in these programs on all five dimensions, suggesting the efficacy of these professional development programs in terms of teachers' professional self-perceptions.

In terms of teachers' participation rates in inservice programs, as well as their evaluation of personal enhancement due to participation in such programs, there were significant differences between the four education regions (labeled A - D) from which the teacher sample was drawn. The mean ratings on these variables for teachers located in regions A and B were markedly higher than those for their counterparts in regions C and D. Similarly, there were significant differences between the regions on the mean scale scores for the Energy/ Enthusiasm and Clarity dimensions of professional self-perception, with teachers in region B recording notably higher mean ratings on all five affect dimensions than their colleagues in the other three regions. Moreover, it was interesting to observe that teachers in region B also had significantly higher mean participation rates in both literacy and non-literacy professional development programs than their peers in the other three regions. A subsequent check of personnel records for the previous three years revealed that, per capita of teacher population, teachers in region B had less than half the number of absentee days of their nearest regional rival (region A). While this finding may be mere coincidence, it is sufficiently suggestive of a positive impact of professional development on teacher affect to warrant further investigation.

Results from the explanatory modeling indicated strong, positive effects of professional development on teachers' professional self-perceptions, particularly those related to Energy/ Enthusiasm. The reciprocal effects of Professional Development and Energy/Enthusiasm were significantly positive and especially the direct effect of Professional Development on Energy/ Enthusiasm. These findings provided explanatory potency to the observations from the raw data, namely, that those teachers who had frequently participated in inservice programs during the *last three years*, regardless of program type, consistently gave self-perception ratings towards the positive ends of the semantic differential scales. Alternatively, those teachers who had none or minimal inservice participation rates tended to provide ratings at the negative ends of the scales.

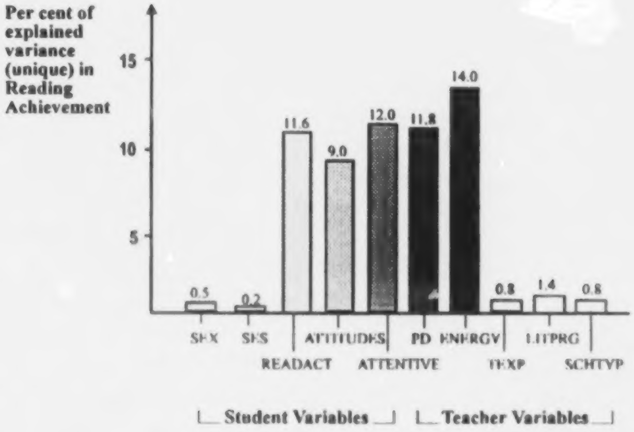
Policy Implications

The policy implications of these findings are clear. The results provide overwhelming support for the efficacy of inservice professional development for teachers and suggest that teachers' professional self-perceptions constitute important criteria for evaluating the intended benefits of inservice programs and may also be crucial, not only in monitoring teacher commitment and adjustment to professional role demands, but also in monitoring outcomes for students. Moreover, the results have important implications for the design and adoption of particular models of inservice program delivery for teachers. Consistent with related research (Rowe, 1987), these findings clearly suggest the utility of professional development programs of the ELIC, LaRIC, and RR kind, not just for literacy, but also for other curriculum and school management domains.

Combined Student Level and Teacher Level Results

The data presented in Figure 8 suggested on the one hand, that the student level variables of SEX and SES and the class/teacher level variables of TEXP, LITPRG, and SCHTYP each account for very small proportions of the variance in students' Reading Achievement. On the other hand, Reading Activity at Home (READACT), Attitudes Towards Reading (ATTITUDES), and Attentiveness in the classroom (ATTENTIVE) are strong student level predictors of Reading Achievement. Similarly, both Teacher Professional Development (PD) and Teacher Affect (ENERGY) each account for marked proportions of the variance in students' Reading Achievement.

Figure 8.1. **Percentage histogram showing proportions of explained variance (unique) in reading achievement for five student level variables and five teacher level variables.**

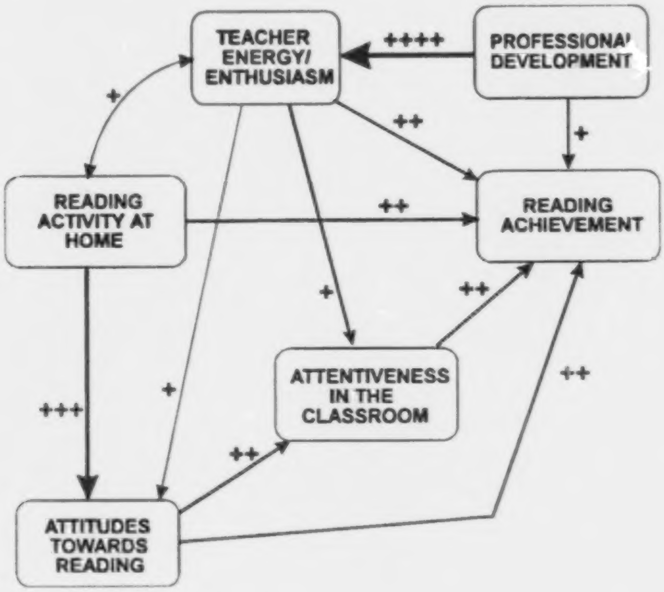


Overall findings from the combined student and teacher level data indicate that teachers' participation in inservice professional development programs have significant, positive effects on their professional self-perceptions (i.e., Energy/Enthusiasm) which in turn, have strong, positive influences on students' attitudes towards reading, attentiveness in the classroom, and reading achievement. The explanatory model shown in Figure 8.2 illustrates the strength of the effect relationships among these factors. For specific technical details, see Rowe (1990b).

All of the findings presented thus far have been based on analyses at a single level. In a study such as the present, teacher and school level effects have crucial implications for analysis, since it is important to account for variation at the student level that may be due to group membership effects. Using multilevel modeling, an important finding was that a large proportion of the variation in students' reading achievement was due to between-class/teacher differences. Much of this variation was accounted for by marked between-class/teacher differences in Teacher

Affect (ENERGY) due to participation in professional development, student Attentiveness in the classroom, and levels of Reading Activity at Home—due in the main to the effects of specific school-home literacy programs and home-based activities of students. Figure 9 summarizes the results of fitting two-level variance component models, showing the proportion of explained variation in students' reading achievement due to between-class teacher differences for four grade level cohorts over the three years of the study.

Figure 8.2. **Schematic explanatory model showing effects among student level and teacher level factors.**

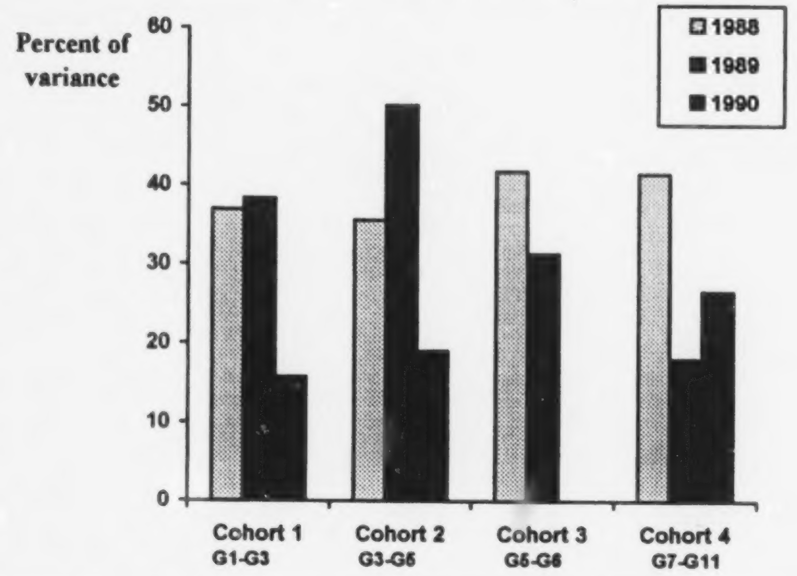


Policy Implications

The finding that teachers' participation in inservice professional development programs has significant positive effects on their affect levels is sufficient justification for the implementation of policies designed to enhance the professional self-perceptions of teachers and their adjustment to professional role demands. However, the finding that such teacher level factors have significant positive effects on students' attitudes, behaviors in the classroom, and achievement outcomes is of vital importance.

There is a strong body of research evidence to show that student achievement is mediated by teacher behavior (Ashton & Webb, 1986; Brophy & Good, 1986; Rosenholtz, 1985) and similar evidence that teachers' professional practices are influenced by their self-perceptions (Lee, Dedrick, & Smith, 1991; Levis, 1985; Rowe & Sykes, 1989; Smylie, 1988). In spite of the prevailing emphasis of policymakers on educational outputs in terms of student achievement, the present findings suggest that teachers' professional self-perceptions constitute important criteria for evaluating the intended benefits of inservice programs (inputs) and appear to be crucial for monitoring student outcomes. In any event, the results from the study indicate that professional development does enhance teacher affect and appears to be a powerful means of engendering positive outcomes for students.

Figure 9. **Percentage histogram showing proportion of variation in students' reading achievement due to between-class/teacher differences for four cohorts over three years.**



The strong evidence from the study for teacher and school effectiveness, in terms of students' achievements in reading, has major policy implications. First, it is important to recognise the high quality work which is being achieved by students, parents, teachers, and schools and to encourage and promote such positive outcomes and their associated *good practices* throughout education systems and the general public. Second, it is essential for any government's public credibility that more than mere lip-service is paid to the identification and promotion of excellence or quality in education. Without evidence of the present kind, claims of *excellence* or *quality* and *good/bad practice* are tenuous at best, as well as being at the mercy of purveyors of popular rumour, anecdote, and faddism. As a basis for policy development, substantive findings of this kind prevent the possibility of irrelevant or unimportant factors being granted greater policy priority than can be justified. Third, and perhaps above all, the value of such findings is that they yield information which enables direct diagnosis of problems (if they exist) and assist parents, teachers, and school administrators to implement positive intervention strategies.

School Level Results

Findings from the multilevel analyses were used to identify those schools in which students consistently attained high levels of reading achievement over the three-year duration of the data collections (1988-1990). The approach adopted involved intensive qualitative investigations in the participating schools during the fourth year of the study (1991), designed to identify and describe the characteristics of schools and classroom programs which are most effective in promoting students' achievements in literacy. This field study component of the project known as *Sharing Strategies for Literacy Improvement* (Holmes-Smith & Charlton, 1992) involved on-site visits to selected schools. The visits included discussions with principals, coordinators, librarians, and teachers; examination of curriculum and school management documents; and observations in classrooms. The outcomes of these investigations have given rise to several propositions that may be used as guiding hypotheses for further investigations.

In those schools in which students had maintained high levels of reading achievement, there was consistent evidence of:

- ***Well established procedures for the early detection of non-readers.*** There is close monitoring of students' reading achievements in the infant years, together with an intervention program to systematically deal with students having difficulties. While the Reading Recovery program is used in many schools, other schools employ similar strategies of their own design.
- ***Quality teachers who are well organised and participate frequently in inservice professional development programs.*** Teachers use structured methods, are methodical, reflective, and collaborative, with a well-developed knowledge of theories and practices of language learning—usually acquired through participation in professional development programs. Teachers have high expectations of students and are highly regarded by principals and other staff. They do not necessarily use the latest methods, but are willing to try new ideas and adapt.
- ***A whole-school focus on teaching and learning.*** Schools have a teaching and learning-focused leadership from the principal and other school leaders. A consistent approach by all teachers in broad curriculum areas is encouraged and there is whole staff involvement in curriculum planning.
- ***Well developed school community relationships.*** There are close links between the school and community with sustained efforts by schools to involve as many parents as possible, mostly through use of deliberate strategies. All schools have programs for parent participation at the lower grade levels. Some have programs for assisting parents to read with their children, including the well-known School Home and Reading Enjoyment (SHARE) program.
- ***Orderly school environments.*** The school environments are characterised by stability, routine, and orderliness. Principals are accomplished managers of their schools, although leadership styles differ.
- ***Effective use of external consultants.*** Either professional school support staff or other experts are used to provide impetus for curriculum development and teaching strategies.
- ***The use of strategies that emphasise the importance of reading.*** A wide range of reading materials is evident everywhere, especially in classrooms. The materials are readily accessible to students and are obviously used. Emphasis is placed on the importance of reading at upper as well as lower grade levels, and in all curriculum areas. Librarians participate actively in promoting reading in cooperation with classroom teachers.

Since *Reading Activity at Home* has been shown to be important to students' reading achievement, some schools have introduced several initiatives designed to improve school-home-community links. The following two examples illustrate the kinds of strategies being used to improve students' reading achievements.

One such initiative, known as *Readers are Leaders*, was used during the 1991 Education Week program at one of the schools. Well known members of the community, including the local mayor, the regional General Manager, an author, and the local football star were invited to read to students. At another school, storytelling evenings are conducted as part of a comprehensive set of strategies that focus on literacy. In this case, families attend storytelling sessions held on three occasions during the year where community members tell or read a story of their own choice. This program, which includes home visits by teachers and a *Parents in Reading Program* based on ELIC principles, consists of a series of six workshops for parents.

The intention is to give parents supportive guidance and encouragement in reading with their children, while working in partnership with teachers.

Discussion and Conclusions

General Summary

In the context of research concerned with factors affecting students' reading achievements, the purpose of the present study was to determine the extent to which students' reading achievements over time are influenced by factors at the student level, at the teacher level, and at the school level. To this end, several explanatory models were proposed and tested using multilevel and covariance-structure modeling. Several outcomes of the study are worth noting.

First, an important conclusion which can be drawn is that in the context of a low-stakes research study, the Profile Reading Bands function as an effective framework for monitoring student progress over Grades K to 11. In addition to providing a broad-based and authentic approach to the assessment of student performance, teacher based Profile assessments of the kind employed here are reliable and appear to be sensitive to student growth and change over the years of schooling (see Figure 4).

Second, in terms of home background factors, the present findings support the argument of Share, Jorm, Maclean, Matthews, and Waterman (1983) that the common practice of using a single index of family socioeconomic status (SES) to measure home background severely underestimates the relationship between the home and students' educational achievement. While SES did have positive effects on measures of students' Attitudes, Attentiveness, and reading Achievement, the effects were small and mostly insignificant. In contrast, both the direct and indirect effects of Reading Activity at Home on students' reading Achievement were significant and positive, as they were on the mediating variables of students' Attitudes towards reading and their Attentiveness in the classroom. Furthermore, the magnitudes of the direct effects of both *Reading Activity at Home* and *Attitudes* on *Achievement* actually increased with student age (Rowe, 1991b). An explanation of this finding is that as students progress through primary and secondary schooling, associated increased curriculum demands require that students spend more time on reading activity for assigned homework tasks, thus increasing both the likelihood of students *reading for pleasure* and *for purpose* and positively influencing achievement and attitudes towards reading (Spiegel, 1981).

Third, the findings related to the magnitude of the effects of Reading Activity at Home on Attentiveness was an especially interesting outcome. This result suggested the presence of a positive carryover effect between activities at home and behavior in the classroom which is clearly in the interests of individual students and other students, as well as teachers. That is, these findings indicate that the opportunity to develop and practice attentiveness-demanding skills at home results in positive transference of similar skills to the classroom. This is underscored by the findings related to the reciprocal effects between attentiveness and reading activity at home which indicated that the effects were strongly interdependent for all student age groups (Rowe & Rowe, 1992b). At least three directions for appropriate classroom management and intervention are suggested.

First, given the mutuality of learning outcomes and behavior, there is a clear need to focus intervention strategies in both domains simultaneously. While findings from several studies show positive long term effects of remedial programs on literacy skills (Bradley & Bryant, 1983; Limbrick, McNaughton, & Glynn, 1985), there is little evidence for long term gains on behavioral outcomes by remediation of learning difficulties alone. On the basis of findings from a study among hyperactive and learning disabled boys, Merrell (1990) notes: "Perhaps concurrent academic and behavioral intervention would be useful in helping many of these students" (p. 294).

Second, there is a clear need to enhance the positive mediating effects of home inputs on students' attitudes, achievement, and behavior in the classroom. Results from this study have provided strong empirical support for the claimed benefits of Reading Activity at Home and the related value of recognising the important contributions which parents can make to the educational development of their children (Hewison, 1988; Topping & Wolfendale, 1985; Webb, Webb, & Eccles, 1985; Winter, 1988). From a more detailed analysis of the READACT items, it was disappointing that so many students in the 5-6 and 7-8 year-old groups indicated that they never or rarely shared reading activities with family members or friends. For students in these age groups, high scores on the *reading alone* item (READ 1) and the shared reading items in particular, were strongly associated with positive attitudes towards reading, high levels of attentiveness in the classroom, and high scores on the measures of reading achievement. For older students, related positive associations were mainly with reading alone (READ 1) and discussing reading (READ 4). This latter finding suggests that, while students may spend less time reading to others and being read to by others as they become independent readers, it is clearly in their interest to participate in activities designed to encourage discussion of reading materials.

Third, given the importance of either direct or indirect parental involvement in students' educational progress, it is imperative that the work of schools be supported by programs designed to assist parents to take an active role in the development of their child's reading skills. Cox (1987) argued that, "School based measures to prevent early reading failure should be coupled with an early intervention programme designed to encourage and assist parents, where necessary, to take a more active role . . . " (p. 84). Consistent with the work of McGee, Williams, and Silva (1988), findings from this study suggest, however, that parental literacy is likely to have a significant impact on the development of such skills. In this context, government policy has a major role to play. Furthermore, in addition to early intervention strategies of the kind advocated and implemented by Pinnell (1989); Pinnell, Lyons, DeFord, Bryk, and Seltzer (1991); and Wasik and Slavin (1993); programs of the type that provide opportunities through which both parent and child literacy are enhanced would appear to have particular merit (Bushell, Miller, & Robson, 1982, 1985; Dundas & Strong, 1988; Topping, 1986; Turner, 1987).

From the combined student level and teacher level data, the overall findings indicate that teachers' participation in inservice professional development programs had significant, positive effects on their professional self-perceptions (i.e., Energy/Enthusiasm) which, in turn, had strong, positive influences on students' Attitudes towards Reading, Attentiveness in the classroom and on their reading achievement. At the class/teacher level and consistent with the work of Rowe and Sykes (1989) and Smylie (1988), the findings provide strong support for a functional relationship between teacher professional development and their professional self-perceptions. Furthermore, the findings provide substantial support for the claimed benefits of inservice training for teachers made elsewhere (Coulter & Ingvarson, 1985; Ingvarson, 1987; Joyce & Showers, 1988; Rowe, 1987). Herein lies sufficient justification for the implementation of policies designed to enhance the professional self-perceptions of teachers and their adjustment to professional role demands.

Finally, the present study has identified that the large variation in students' reading achievement is due to significant between-class/teacher differences. The fact that such teacher level factors have strong positive effects on students' attitudes, behaviors in the classroom, and achievement outcomes is of vital importance, with profound implications. As Slavin and colleagues' (1994a) evaluations of the *Success for All* program among low SES schools in Baltimore and Philadelphia have shown, students, who regardless of their socioeconomic backgrounds, are taught by well-trained, strategically focused, energetic, and enthusiastic teachers in schools with well-managed and stable environments, and with well-developed school-home-community links, are fortunate indeed (see Slavin, et al., 1994a, 1994b). While it may be impossible to legislate such factors into existence, the fact that students, parents, teachers, and schools make a difference (as shown by the findings of this study) should provide impetus and encouragement to those concerned with the crucial issues of *educational effectiveness*.

Impact of Outcomes

Findings from the *100 Schools Project - Literacy Programs Study* provided considerable impetus and support for the Victorian state government's *Literacy Strategy* between 1988 and 1991 and in particular, for the *Reading Together* policy initiative launched by the then Minister for Education, in April, 1989. In building on findings from the project, the Literacy Strategy stressed the importance of students reading at home and the valuable role which parents play in the educational development of their children. Promotional literature on *Parents as Partners* were produced for use by schools and International Literacy Year (1989) funding was allocated to support schools' home reading schemes. Professional development programs such as ELIC, LaRIC, and CLIC have since become widely available, and Reading Recovery is well established in all state regions.

Outcomes from the study continue to be useful, not only in shaping and supporting policy, but also in meeting accountability requirements. Publications from the research range from articles in local and international scientific journals, conference papers, popular papers, and workshops for school administrators, teachers, and parents. The study has also attracted considerable media interest.

Above all, findings from the present study provided both the impetus and justification for a further four-year longitudinal study of teacher and school effectiveness currently being conducted by the Centre for Applied Educational Research at the University of Melbourne, Australia. Beginning in 1992, this study, known as the *Victorian Quality Schools Project* (VQSP) has been designed to explain variation in students' progress in three literacy domains (*Reading, Writing*, and *Spoken Language*) and two in mathematics (*Number* and *Space*) at the student, class/teacher, and school levels. The study involves a cluster-designed sample consisting of five entire grade-level cohorts consisting of 13,900 students, including their parents and teachers, drawn from 90 government, Catholic, and independent elementary and secondary schools. To model the complex network of factors affecting student progress, use is made of structural equation modeling and multilevel path analyses to explore structural relationships within the same levels and between different levels. Findings from the VQSP have been reported in various forms by Hill, Holmes-Smith, and Rowe (1993); Hill and Rowe (in press a, b); Hill, Rowe, and Holmes-Smith (1995); and Rowe, Hill, and Holmes-Smith (1994).

Like its predecessor study described in this paper, a feature of the VQSP is the use of teacher profile assessments designed to obtain authentic measures of educational progress, together with standardized test measures of academic ability. The results of fitting multilevel models to the data using different adjustments, indicate that the proportion of total variation in student achievement ranges from as little as three to seven percent at the school level, to as much as 35-54 percent at the class/teacher levels. Moreover, the effect size of teacher participation in literacy inservice professional development programs on students' progress in literacy (adjusted for intake characteristics and initial achievement) has consistently yielded significant estimates of 0.4 of a standard deviation. Similar analyses of the impact of measures of teacher quality (i.e., *teacher responsiveness*) on students' *attitudes to learning* yield standardized effect estimates of 0.6.

The most salient findings from both the *100 Schools Project - Literacy Programs Study* and the *Victorian Quality Schools Project* underscore the fact that learning takes place in classrooms through the interaction of students and their teachers, in partnership with parents. The explanation for the large class/teacher effects and small to insignificant school effects is that they primarily reflect variations in teacher quality. The suggestion here is that (Rowe, Holmes-Smith, & Hill, 1993):

> . . . it is essentially through the quality of teaching and learning that effective schools 'make a difference.' In fact, on the basis of our findings to date it could be argued that effective schools are only 'effective' to the extent that they have 'effective' teachers. (p. 15)

Such findings are entirely consistent with Scheerens (1993) observation that:

> . . . teacher and classroom variables account for more of the variance in pupil achievement than school variables. Also, in general, more powerful classroom level variables are found that account for between-class variance than school level variables in accounting for between-school variance. (p. 20)

The findings also appear to be consistent with Monk's (1992) conclusion based on a comprehensive review of the education productivity research literature, namely: "One of the recurring and most compelling findings within the corpus of production function research is the demonstration that how much a student learns depends on the identity of the classroom to which that student is assigned" (p. 320). Similarly, Reynolds and Packer (1992) observe:

> On the causes of school effects, it seems that early beliefs that school influences were distinct from teacher or classroom influences were misplaced, since a large number of studies utilising multilevel modeling show that the great majority of variation between schools is in fact due to classroom variation and that the unique variance due to the influence of the school, and not the classroom, shrinks to very small levels. (p. 173)

Together with the findings presented here, such observations point to a need for a possible refocus in the *educational effectiveness* research agenda for literacy, numeracy, and other school based curricula, to one that is closer to students' experiences of schooling and reexamines class/teacher influences on student learning outcomes as advocated by Brophy and Good (Brophy, 1981,1986; Brophy & Good, 1986; Good & Brophy, 1984) and more recently by Creemers (1992) and Slavin (1994).

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Appendix

Reliability Properties of the Victorian Reading Profile Bands

Using the holistic rating method for each *band* described in the body of the text, the rating pattern for each student formed a qualitative *cumulative* scale similar to that described by Guttman (1944). Reliability analyses have been computed for the *Reading Profile Bands*, by grade level, using the Guttman method to provide *lower bound estimates of true reliability*. The relevant coefficients given in the table below are *standardized item alpha* estimates and refer to data obtained from both the *100 Schools Project - Literacy Programs Study* and the *Victorian Quality Schools Project* (see Hill, Holmes-Smith, & Rowe, 1993). The sample sizes (*ns*) for each grade level cohort are given in parentheses. For the Reading Bands, concurrent validity estimates with the *Test of Reading Comprehension* (TORCH - Mossenson, Hill, & Masters, 1987) are given in brackets under the reliability coefficient estimates for grade levels 3 through 11. These estimates are expressed as Pearson product-moment, zero-order correlation coefficients (r).

Table A1

Guttman Reliability Estimates for the Victorian Reading Profile Bands, by Grade Level

Grade Level	**Reading/** **(Correlation with TORCH)**
Prep (K) (n = 2281	0.791
Grade 1 (n = 1965)	0.754
Grade 2 (n = 2188)	0.769
Grade 3 (n = 1876)	0.800 (r = 0.501)
Grade 4 (n = 2209)	0.843 (r = 0.426)
Grade 5 (n = 2015)	0.831 (r = 0.515)
Grade 6 (n = 5062)	0.845 (r = 0.471)
Grade 7 (n = 3661)	0.902 (r = 0.520)
Grade 8 (n = 2630)	0.876 (r = 0.490)
Grade 9 (n = 3570)	0.926 (r = 0.465)
Grade 10 (n = 2687)	0.876 (r = 0.478)
Grade 11 (n = 730)	0.898 (r = 0.516)

Table A2

Test/Re-Test and Inter-Rater Reliability Estimates for the Victorian Reading Profile Bands, by Grade Level*

Grade Level	Test/Re-Test Reliability	Inter-Rater Reliability
Grade 1	0.892	0.855
Grade 3	0.908	0.893
Grade 5	0.911	0.871
Grade 7	0.927	0.832
Grade 9	0.929	0.848

*Pearson product-moment correlations

References

Ainley, J., Goldman, J., & Reed, R. (1990). *Primary schooling in Victoria: A study of students' attitudes and achievements in Years 5 and 6 of government primary schools.* (ACER Research Monograph No. 37). Hawthorn, Vic: The Australian Council for Educational Research.

Aitkin, M., & Longford, N. (1986). Statistical modelling issues in school effectiveness studies. *Journal of the Royal Statistical Society, Series A, 149,* 1-43.

Aitkin, M., & Zuzovsky, R. (1991). *A conceptual framework and an indicator system to explain the variability in science outcomes in Israeli elementary schools.* Department of Mathematics & Statistics and School of Education, Tel-Aviv University. Mimeograph.

Alexander, H., & Filler, R. C. (1976). *Attitudes and reading.* Newark, DL: International Reading Association.

Alwin, D. F., & Jackson, D. J. (1980). Measurement models for response errors in surveys: Issues and applications. In D. Schuessler (Ed.), *Sociological methodology.* San Francisco: Jossey-Bass.

American Psychiatric Association. (1987). *DSM-III-R: Diagnostic and statistical manual of mental disorders* (3rd ed. Revised). Washington, DC: Author.

American Psychiatric Association. (1994). *DSM-IV: Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Anderson, D. S. (1990, July). *Long term effects of public and private schooling.* Paper presented at XIIth World Congress of Sociology, Madrid. Mimeograph.

Ashton, P., & Webb, R. (1986). *Making a difference: Teachers' sense of efficacy and student achievement.* New York: Longman.

Austin, G., & Reynolds, D. (1990). Managing for improved school effectiveness: An international survey. *School Organisation, 10,* 167-178.

Bank, B. J. (1985). Student sex and classroom behavior. In T. Husen & T. N. Postlethwaite (Eds.), *The international encyclopedia of education*, (Vol. 8, pp. 4878-4881). Oxford: Pergamon.

Banks, D. K. (1992). *Effective schools research: A multilevel analysis of the conceptual framework*. Unpublished doctoral dissertation, The University of Melbourne Institute of Education.

Beach, R. W. (1985). Attitude towards literature. In T. Husen & T. N. Postlethwaite (Eds.), *The international encyclopedia of education*, (Vol. 8, pp. 3115-3117). Oxford: Pergamon.

Beck, I. L., & Carpenter, P. A. (1986). Cognitive approaches to understanding reading: Implications for instructional practice. *American Psychologist, 41*, 1098-1105

Bennett, S. N. (1978). Recent research on teaching: A dream, a belief and a model. *British Journal of Educational Psychology, 48*, 127-147.

Bernstein, B. (1971). *Class, codes and control Vol 1: Theoretical studies towards a sociology of language*. London: Routledge and Kegan Paul.

Bettelheim, B., & Zelan, K. (1982). *On learning to read: The child's fascination with meaning*. New York: Knopf.

Bidwell, C., & Kasarda, J. (1980). Conceptualizing and measuring the effects of school and schooling. *American Journal of Education, 88*, 401-430.

Bloom, B. S. (1976). *Human characteristics and school learning*. New York: McGraw-Hill.

Bloom, B. S. (1980). *The state of research on selected alterable variables in education*. Chicago: Department of Education, University of Chicago.

Bock, R. D. (Ed.) (1989). *Multilevel analysis of educational data*. New York: Academic Press.

Boekaerts, M. (1986). Motivation in theories of learning. *International Journal of Educational Research, 10*(2), 129-141.

Bosker, R. J., Creemers, B. P. M., & Scheerens, J. (Guest Editors) (1994). Conceptual and methodological advances in educational effectiveness research. *International Journal of Educational Research, 21*(2), 121-231.

Bossert, S. T. (1988). School effects. In N. J. Boyan (Ed.), *Handbook of research on educational administration: A project of the American Educational Research Association* (pp. 341-352). New York: Longman.

Bottani, N., & Delfau, I. (1990). Indicators of the quality of educational systems: An international perspectice. *International Journal of Educational Research, 14*, 321-408.

Bradley, L., & Bryant, P. E. (1983). Categorizing sounds and learning to read: A causal connection. *Nature, 301*, 419-421.

Brenner, S. O., Sörbom, D., & Wallius, E. (1985). The stress chain: A longitudinal confirmatory study of teacher stress, coping and social support. *Journal of Occupational Psychology, 58*, 1-13.

Broadfoot, P. M. (Ed.) (1984). *Selection, certification and control*. Sussex, UK: The Falmer Press.

Broadfoot, P. M. (1985). Alternatives to public examinations. In D. Nuttall (Ed.), *Assessing Educational Achievement*. Sussex, UK: The Falmer Press.

Broadfoot, P. M. (Ed.) (1986). *Profiles and Records of Achievement: A review of issues and practice*. London: Holt, Rinehart and Winston.

Broadfoot, P. M. (1987). *Introducing profiling: A practical manual*. London: Macmillan.

Broadfoot, P. M. (1988). The national assessment framework and records of achievement. In H. Torrance (Ed.), *National Assessment and Testing: A Research Response* (pp. 3-14). London: British Educational Research Association.

Brophy, J. (1981). Teacher praise: A functional analysis. *Review of Educational Research, 51*, 5-32.

Brophy, J. (1986). Teacher influences on student achievement. *American Psychologist, 41*, 1069-1077.

Brophy, J., & Good, T. L. (1986). Teacher behavior and student achievement. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 328-375). New York: Macmillan.

Brown, R. L. (1989). Using covariance modeling for estimating reliability on scales with ordered polytomous variables. *Educational and Psychological Measurement, 49*, 383-398.

Bryk, A. S., & Raudenbush, S. W. (1987). Application of hierarchical linear models to assessing change. *Psychological Bulletin, 101*(1), 147-158.

Bryk, A. S., & Raudenbush, S. W. (1989). Towards a more appropriate conceptualization of research on school effects: A three-level hierarchical linear model. In D. Bock (Ed.), *Multilevel analysis of educational data* (pp. 159-204). New York: Academic Press.

Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models: Applications and data analysis methods*. Newbury Park, CA: Sage.

Bryk, A. S., Raudenbush, S. W., & Congdon, R. T. (1992). *HLM-3L: Computer program and users' guide*. Mooresville, IN: Scientific Software.

Burstein, L. (1980). The analysis of multilevel data in educational research and evaluation. In D. C. Berliner (Ed.), *Review of research in education*, Vol. 8 (pp. 158-233). Washington, DC: American Educational Research Association.

Burstein, L. (1988). Units of analysis. In J. P. Keeves (Ed.), *Educational research, methodology, and measurement: An international handbook* (pp. 775-781). Oxford: Pergamon.

Bushell, R., Miller, A., & Robson, D. (1982). Parents as remedial teachers: An account of a paired reading project with junior school failing readers and their parents. *Journal of the Association of Educational Psychologists, 5*, 7-13.

Bushell, R., Miller, A., & Robson, D. (1985). The development of paired reading in Derbyshire. In K. Topping & S. Wolfendale (Eds.), *Parental involvement in children's reading* (Ch. 14). Beckenham: Croom Helm.

Butler, S. R., Marsh, H. W., Sheppard, M., & Sheppard, J. L. (1985). Seven-year longitudinal study of the early prediction of reading achievement. *Journal of Educational Psychology, 77*, 349-361.

Cairns, L. G. (1985). Behavior problems in the classroom. In T. Husen & T. N. Postlethwaite (Eds.), *The international encyclopedia of education*, (Vol. 1, pp. 451-456). Oxford: Pergamon.

Calfee, R., & Drum, P. (1986). Research on teaching reading. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 804-849). New York: Macmillan.

Cantwell, D. P., & Baker, L. (1991). Association between attention deficit-hyperactive disorder and learning disorders. *Journal of Learning Disabilities, 24*, 88-95

Caplan, N., Choy, M. H., & Whitmore, J. K. (1992). Indochinese refugee families and academic achievement. *Scientific American, 262*(2), 18-24.

Carroll, J. B. (1963). A model of school learning. *Teachers College Record, 64*, 723-733.

Carroll, J. B. (1984). The model of school learning: Progress of an idea. In L. W. Anderson (Ed.), *Time and school learning* (pp. 15-45). Beckenham, Kent: Croom Helm.

Castles, I. (1986). *Australian standard classification of occupations: Statistical classification*. Australian Bureau of Statistics. Canberra: C. J. Thompson Government Printer.

Chapman, J., Angus, L., Burke, G., & Wilkinson, V. (Eds.) (1991). *Improving the quality of Australian schools*. (Australian Education Review No. 33). Hawthorn, Vic: The Australian Council for Educational Research.

Charlton, M., & Holmes-Smith, P. (1987). *An evaluation of the Key Group Project: A professional development program for teachers*. Melbourne, Vic: Curriculum Branch, Ministry of Education (Schools Division).

Cheung, K. C., Keeves, J. P., Sellin, N., & Tsoi, S. C. (Eds.) (1990). The analysis of multilevel data in educational research: Studies of problems and their solutions. *International Journal of Educational Research, 14*, 215-319.

Chubb, J. E. (1988). Why the current wave of school reform will fail. *The Public Interest, 90*, 93-105.

Chubb, J. E., & Moe, T. M. (1990). *Politics, markets and America's schools*. Washington, DC: The Brookings Institute.

Clay, M. M. (1985). Reading Recovery: An early intervention programme. In *The early detection of reading difficulties* (3rd ed., Part two, pp. 47-116). Auckland, NZ: Heinemann.

Coleman, J., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfield, F., & York, R. (1966). *Equality of educational opportunity*. Washington, DC: U.S. Government Printing Office.

Coleman, J. S., Hoffer, T., & Kilgore, S. D. (1982). *High School achievement: Public, private and Catholic schools compared*. New York: Basic Books.

Commonwealth Schools Commission (1984). *Commonwealth standards for Australian schools*. Canberra: Australian Government Publishing Service.

Cooley, W. W., & Leinhardt G. (1975). *An application of a model for investigating classroom processes*. Pittsburgh: Learning Research and Development Centre, University of Pittsburgh.

Cooley, W. W., & Lohnes, P. R. (1976). *Evaluation research in education*. New York: Irvington.

Coulter, F., & Ingvarson, L. C. (1985). *Professional development and the improvement of schooling*. Canberra: Commonwealth Schools Commission.

Cox, T. (1987). Slow starters versus long-term backward readers. *British Journal of Educational Psychology, 57*, 73-86.

Creemers, B. P. M. (1992). School effectiveness, effective instruction and school improvement in the Netherlands. In D. Reynolds & P. Cuttance (Eds.), *School effectiveness: Research policy and practice*. London: Cassell.

Creemers, B. P. M., & Scheerens, J. (Eds.). (1989). Developments in school effectiveness. *International Journal of Educational Research, 13*, 685-826.

Cronbach, L. J., & Webb, N. (1975). Between and within-class effects in a reported aptitude-by-treatment interaction: Reanalysis of a study by G. L. Anderson. *Journal of Educational Psychology, 6*, 717-724.

Cuttance, P. (1992). Evaluating the effectiveness of schools. In D. Reynolds & P. Cuttance (Eds.), *School effectiveness: Research, policy and practice*. London: Cassell.

Darling-Hammond, L. (1994). Performance-based assessment and educational equity. *Harvard Educational Review, 64*(1), 5-29.

Davie, R., Butler, N., & Goldstein, H. (1972). *From birth to seven: A report of the National Child Development Study*. London: Longman/National Children's Bureau.

Dawkins, J. S. (1988). *Strengthening Australia's schools: A consideration of the focus on content of schooling*. Canberra, ACT: Australian Government Publishing Service.

Day, A. M., & Peters, R. DeV. (1989). Assessment of attentional difficulties in underachieving children. *Journal of Educational Research, 82*, 356-361.

Debus, R. L. (1985). Students' cognitive characteristics and classroom behavior. In T. Husen & T. N. Postlethwaite (Eds.), *The international encyclopedia of education*, (Vol. 8, pp. 4886-4890). Oxford: Pergamon.

deJong, P. F. (1993). The relationship between students' behavior at home and attention and achievement in elementary school. *British Journal of Educational Psychology, 63*, 201-213.

Department of Education and Science (1983). *School standards and spending: Statistical analysis*. London: Author.

Department of Education and Science (1984). *School standards and spending: Statistical analysis—a further appreciation*. London: Author.

Douglas, J. W. B. (1964). *The home and the school: A study of ability and attainment in the primary school*. London: MacGibbon and Kee.

Dundas, P., & Strong, T. (1988). *Readers, writers and parents learning together*. Melbourne: ASCCO.

Dunkin, M. J. (Ed.) (1987). *The international encyclopedia of teaching and teacher education*. Oxford: Pergamon.

Dunkin, M. J., & Biddle, B. J. (1974). *The study of teaching*. New York: Holt Rinehart and Winston.

Dunkin, M. J., & Doenau, S. J. (1985). Student ethnicity and classroom behavior. In T. Husen & T. N. Postlethwaite (Eds.), *The International encyclopedia of education*, (Vol. 8, pp. 4841-4845). Oxford: Pergamon.

Dykman, R. A., & Ackerman, P. T. (1991). Attention deficit disorder and specific reading disability: Separate but often overlapping disorders. *Journal of Learning Disabilities, 24*, 96-103.

Ecob, R., Evans, J., Hutchison, D., & Plewis, I. (1982). *Reading between the numbers: A critical guide to educational research*. London: BSSRS Publications Ltd.

Edmonds, R. R. (1979a). Effective schools for the urban poor. *Educational Leadership, 37*, 15-27.

Edmonds, R. R. (1979b). Some schools work and more can. *Social Policy, 9*, 28-32.

Edmonds, R. R. (1981). Making public schools effective. *Social Policy, 12*, 56-60.

Elkins, J., & Izard, J. (Eds.) (1992). *Student behaviour problems: Context, initiatives and programs*. Hawthorn, Vic: The Australian Council for Educational Research.

Elly, W. B. (1992). *How in the world do students read?: IEA Study of Reading Literacy*. The Hague: The International Association for the Evaluation of Educational Achievement.

Elsworth, G. R., & Coulter, F. (1977). *Aspiration and attainment: The measurement of professional self-perception in student teachers* (Occasional Paper, No. 11). Hawthorn, Vic: The Australian Council for Educational Research.

Eraut, M. (1985). Inservice teacher education. In T. Husen & T. N. Postlethwaite (Eds.), *The international encyclopedia of education*, (Vol. 5, pp. 2511-26). Oxford: Pergamon.

Felton, H. (1986). ELIC in Tasmania: *The implementation of the Early Literacy Inservice Course in Tasmania in 1985*. Hobart: Curriculum Development and Evaluation Section, Education Department, Tasmania.

Fisher, G. W., Berliner, D. C., Filby, N. N., Marliave, R., Cahen, L. S., & Dishaw, M. M. (1980). Teaching behaviors, academic learning time, and student achievement: An overview. In C. Denham & A. Lieberman (Eds.), *Time to learn* (pp 7-32). Washington: The National Institute of Education.

Fleishman, J., & Benson, J. (1987). Using LISREL to evaluate measurement models and scale reliability. *Educational and Psychological Measurement, 47*, 925-939.

Fletcher, J. M., Morris, R. D., & Francis, D. J. (1991). Methodological issues in the classification of attention-related disorders. *Journal of Learning Disabilities, 24*, 72-77.

Floden, R. E. (1994). Reshaping assessment concepts. *Educational Researcher, 23*(2), 4.

Fotheringham, J. B., & Creal, D. (1980). Family socioeconomic and educational-emotional characteristics as predictors of school achievement. *Journal of Education Research, 73*, 311-317.

Fraser, B. J. (1989). Research syntheses on school and instructional effectiveness. *International Journal of Educational Research, 13*(7), 707-719.

Fraser, B. J., Walberg, H. J., Welch, W. W., & Hattie, J. A. (1987). Syntheses of educational productivity research. *International Journal of Educational Research, 11*(2), 145-252.

Frederiksen, N. (1984). The real test bias: Influences of testing on teaching and learning. *American Psychologist, 39*, 193-202.

Freiberg, H. J., Prokosch, N., Treister, E. S., & Stein, T. (1990). Turning around five at-risk elementary schools. *School Effectiveness and School Improvement, 1*(1), 5-25.

Geekie, P. (1988). *Evaluation report on the Reading Recovery field trial in central Victoria 1984*. Centre for Studies in Literacy, Faculty of Education, University of Wollongong.

Glass, G. V., Cahen, L. S., Smith, M. L., & Filby, N. N. (1982). *School class size: Research and policy*. Beverly Hills: Sage.

Glen, M. (1986). *The Early Literacy Inservice Course in Queensland: An evaluation of the 1985 trials and implementation*. Brisbane: Research Services Branch, Department of Education, Queensland.

Goldstein, H. (1979). *The design and analysis of longitudinal studies: Their role in the measurement of change*. London: Academic Press.

Goldstein, H. (1980). The statistical procedures. In B. Tizard (Ed.), *Fifteen thousand hours: A discussion* (Bedford Way Papers, No. 1): University of London Institute of Education.

Goldstein, H. (1986). Multilevel mixed linear model analysis using iterative generalized least squares. *Biometrika, 73*, 43-56.

Goldstein, H. (1987). *Multilevel models in educational and social research*. London: Charles Griffin & Co. Ltd.

Goldstein, H. (1995). *Multilevel statistical models*. London: Edward Arnold.

Goldstein, H., & McDonald, R. P. (1988). A general model for the analysis of multilevel data. *Psychometrika, 53*, 455-467.

Good, T. L., & Brophy, J. (1984). *Looking in classrooms* (3rd ed.). New York: Harper & Row.

Good, T. L., & Brophy, J. (1986). School effects. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 570-604). New York: Macmillan.

Grant, G. (1988). *The world we created at Hamilton High*. Cambridge: Harvard University Press.

Gray, J., Jesson, D., & Jones, B. (1984). Predicting differences in examination results between local education authorities: Does school organisation matter? *Oxford Review of Education, 10*(1), 45-68.

Griffin, P. E. (1990). Profiling literacy development: Monitoring the accumulation of reading skills. *Australian Journal of Education, 34*, 290-311.

Griffin, P. E., & Jones, C. (1988). *Assessing the development of reading behavior: A Report of the Profiles and Reading Band development*. Melbourne, Vic: Ministry of Education (Schools Division).

Griffin, P. E., & Nix, P. (1991). *Educational assessment and reporting: A new approach*. London: Harcourt Brace Jovanovich.

Grimmett, S., & McCoy, M. (1980). Effects of parental communication on reading performance of third grade children. *The Reading Teacher, 33*, 303-308.

Guskey, T. (1986). Staff development and the process of teacher change. *Educational Researcher, 15*(5), 5-12.

Guttman, L. (1944). A basis for scaling quantitative data. *American Sociological Review, 9*, 139-150.

Hanushek, E. A. (1981). Throwing money at schools. *Journal of Policy Analysis and Management, 1*, 19-41.

Hanusheck, E. A. (1985). Production functions in education. In T. Husen & T. N. Postlethwaite, (Eds.), *The international encyclopedia of education*, (Vol. 7, pp. 4059-4069). Oxford: Pergamon.

Harris, C. W. (1963). *Problems in the measurement of change*. Madison: University of Wisconsin.

Harris, M., & Fasano, C. (1988). Toward a policy on continuing professional development of teachers: Australian perspectives. *Journal of Education Policy, 3*, 291-300.

Hattie, J. A. (1992). Measuring the effects of schooling. *Australian Journal of Education, 36*(1), 5-13.

Hewison, J. (1988). The long term effectiveness of parental involvement in reading: A follow-up to the Haringey Reading Project. *British Journal of Educational Psychology, 58*, 184-190.

Hewton, J. (Ed.) (1991). *Performance indicators in education: What can they tell us?* Papers from the Third National Conference. Brisbane: Australian Conference of Directors-General of Education.

Hill, P. W. (1992, October 5). Commentary: The National Schools Project. *Schools Bulletin, 2*(18).

Hill, P. W., Holmes-Smith, P., & Rowe, K. J. (1993). *School and teacher effectiveness in Victoria: Key findings from Phase 1 of the Victorian Quality Schools Project*. Melbourne: Centre for Applied Educational Research, The University of Melbourne. (ERIC Clearing House, Document No. ED 367 067)

Hill, P. W., & Rowe, K. J. (in press a). Multilevel modeling in school effectiveness research. *School Effectiveness and School Improvement*.

Hill, P. W., & Rowe, K. J. (in press b). Educational effectiveness: Multilevel modeling of students' educational progress. *American Educational Research Journal*.

Hill, P. W., Rowe, K. J., & Holmes-Smith, P. (1995). *Factors affecting students' educational progress: Multilevel modelling of educational effectiveness*. Paper presented at the eighth annual International Congress for School Effectiveness and Improvement, CHN, Leeuwarden, The Netherlands, January 3-6, 1995.

Hinshaw, S. P. (1992a). Academic underachievement, attention deficits and aggression: Comorbidity and implications for intervention. *Journal of Consulting and Clinical Psychology, 60*, 893-903

Hinshaw, S. P. (1992b). Externalizing behavior problems and academic underachievement in childhood and adolescence: Causal relationships and underlying mechanisms. *Psychological Bulletin, 111*, 127-155.

Hoffman, S. (Guest Editor) (1991). Educational partnerships: Home-school community. *The Elementary School Journal, 91*(3), 191-319.

Holmes-Smith, P., & Charlton, M. (1992). *Sharing strategies for literacy improvement: A report of major findings*. Melbourne, Vic: School Programs Division, Ministry of Education.

Holmes-Smith, P., & Rowe, K. J. (1994). *The development and use of congeneric measurement models in school effectiveness research: Improving the reliability and validity of composite and latent variables for fitting multilevel and structural equation models*. Paper presented at the 7th International Congress for School Effectiveness and Improvement, The World Congress Centre, Melbourne, January 3-6, 1994.

Hopkins, D. (1991). *Process indicators for school improvement*. Paris: OECD/CERI INES Project.

Ingvarson, L. (1987). Models of inservice education and their implications for professional development policy. *Independent Teacher, 17*(2), 23-32.

Ingvarson, L., & Mackenzie, D. (1988). Factors affecting the impact of inservice courses for teachers: Implications for policy. *Teaching and Teacher Education, 4*, 139-55.

Jencks, C., Smith, M., Acland, H., Bane, M. J., Cohen, D., Gentis, H., Heynes, B., & Michelson, S. (1972). *Inequality: A reassessment of the effect of family and schooling in America.* New York: Basic Books.

Jesson, D., Mayston, D., & Smith, P. (1987). Performance assessment in the education sector: Educational and economic perspectives. *Oxford Review of Education, 13*(3), 249-266.

Joint Review of Teacher Education, Report. (1986). *Improving teacher education.* Canberra: Commonwealth Tertiary Education Commission and Schools Commission.

Jones, M. G. (1989). *Parental participation in children's reading: What really happens?* Unpublished M. Ed. thesis, Monash University.

Jöreskog, K. G. (1971). Statistical analysis of sets of congeneric tests. *Psychometrika, 36,* 109-133.

Jöreskog, K. G., & Sörbom, D. (1989). *LISREL 7: A Guide to the program and applications.* Chicago: SPSS.

Jorm, A. F., Share, D. L., Matthews, R., & Maclean, R. (1986). Behavior problems in specific reading retarded and general reading backward children: A longitudinal study. *Journal of Child Psychology and Psychiatry, 27,* 33-43.

Joyce, B., & Showers, B. (1988). *Student achievement through staff development.* New York: Longman.

Joyce, B., Showers, B., & Rolheiser-Bennett, C. (1987). Staff development and student learning: A synthesis of research on models of teaching. *Educational Leadership, 45*(2), 11-23.

Kahl, T. N. (1985). Students' social background and classroom behavior. In T. Husen & T. N. Postlethwaite (Eds.), *The international encyclopedia of education,* (Vol. 8, pp. 4890-4900). Oxford: Pergamon.

Kazdin, A. E. (1987). Treatment of antisocial behavior in children: Current status and future directions. *Psychological Bulletin, 102,* 187-203.

Keeves, J. P. (1986a). The performance cycle. *International Journal of Educational Research, 10,* 143-157.

Keeves, J. P. (1986b). Motivation and school learning. *International Journal of Educational Research, 10,* 117-127.

Keller, M. B., Lavori, P. W., Beardslee, W. R., Wunder, J., Schwartz, C. E., Roth, J., & Biederman, J. (1992). The disruptive behavioral disorder in children and adolescents: Comorbidity and clinical course. *Journal of the American Academy of Child and Adolescent Psychiatry, 31,* 204-209.

Kinsbourne, M. (1984). Beyond attention deficit: Search for the disorder in ADD. In L. M. Bloomingdale (Ed.), *Attention deficit disorder,* (pp. 133-145). New York: Spectrum.

Kysel, F., Varlaam, A., Stoll, L., & Sammons, P. (1983). *The child at school: A new behavior schedule.* Internal Report RS 907/83. London: Inner London Education Authority, Research and Statistics Branch.

Lacey, C., & Lawton, D. (1981). *Issues in evaluation and accountability.* London: Methuen.

Lahadern, H. M. (1968). Attitudinal and intellectual correlates of attention: A study of four sixth grade classrooms. *Journal of Educational Psychology, 59,* 320-324.

Lanier, J. E., & Little, J. W. (1986). Research on teacher education. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 527-569). New York: Macmillan.

Larkin, A. I., & Keeves, J. P. (1984). *The class size question: A study at different levels of analysis.* (ACER Research Monograph No. 26). Hawthorn, Vic: The Australian Council for Educational Research.

Lee, V. E., & Bryk, A. S. (1989). A multilevel model of the social distribution of high school achievement. *Sociology of Education, 62,* 172-192.

Lee, V. E., Dedrick, R. F., & Smith, J. B. (1991). The effect of the social organization of schools on teachers' efficacy and satisfaction. *Sociology of Education, 64*, 190-208.

Lesh, R., & Lamon, S. J. (Eds.) (1992). *Assessment of authentic performance in school mathematics*. Washington, DC: American Association for the Advancement of Sciences.

Levine, D. U., & Lezotte, L. W. (1990). *Unusually effective schools: A review and analysis of research and practice*. Madison, WS: National Centre for Effective Schools Research & Development.

Levis, D. S. (1985). Teacher personality and instruction. In T. Husen & T. N. Postlethwaite. (Eds.), *The international encyclopedia of education*, (Vol. 9, pp. 5016-5021). Oxford: Pergamon.

Levy, F., Horn, K., & Dalglish, R. (1987). Relation of attention deficit and conduct disorder to vigilance and reading lag. *Australian and New Zealand Journal of Psychiatry, 21*, 242-252.

Lightfoot, S. L. (1983). *The good high school*. New York: Basic Books.

Limbrick, E., McNaughton, S., & Glynn, T. (1985). Reading gains for underachieving tutors and tutees in a cross-age tutoring programme. *Journal of Child Psychology and Psychiatry, 26*, 939-953.

Linn, R. L. (1981). Measuring pretest-posttest performance changes. In R. Berk (Ed.), *Educational evaluation methodology: The state of the art* (pp. 84-109). Baltimore, MD: Johns Hopkins University Press.

Linn, R. L. (1986). Educational testing and assessment: Research needs and policy issues. *American Psychologist, 41*(10), 1153-1160.

Loeber, R. (1990). Development and risk factors of juvenile antisocial behavior and delinquency. *Clinical Psychology Review, 10*, 1-41.

Longford, N. T. (1986). VARCL: Interactive software for variance component analysis. *The Professional Statistician, 5*, 28-32.

Longford, N. T. (1987). A fast scoring algorithm for maximum likelihood estimation in unbalanced mixed models with nested effects. *Biometrika, 74*, 817-827.

Lunberg, I., & Linnakylä, P. (1993). *Teaching reading around the world: IEA Study of Reading Literacy*. The Hague: The International Association for the Evaluation of Educational Achievement.

Madden, N. A., Slavin, R. E., Karweit, N. L., Dolan, L. J., & Wasik, B. A. (1993). Success for All: Longitudinal effects of a restructuring program for inner-city elementary schools. *American Educational Research Journal, 30*, 123-148.

Mann, V. (1984). Reading skill and language skill. *Developmental Review, 4*, 1-[illegible]5.

Masters, G. N. (1982). A Rasch model for partial credit scoring. *Psychometrika, 47*, 149-174.

Maughan, B., Gray, G., & Rutter, M. (1985). Reading retardation and antisocial behavior: A follow-up into employment. *Journal of Child Psychology and Psychiatry, 26*, 741-758.

McGaw, B., Long, M. G., Morgan, G., & Rosier, M. J. (1989). *Literacy and numeracy in Victorian schools: 1988–A report of a study commissioned by the Victorian Ministry of Education*. ACER Research Monograph No 34. Hawthorn, Vic: The Australian Council for Educational Research.

McGaw, B., Piper, K., Banks, D., & Evans, B. (1992). *Making schools more effective: A Report of the Effective Schools Project*. Hawthorn, Vic: The Australian Council for Educational Research.

McGee, R., & Share, D. L. (1988). Attention deficit disorder-hyperactivity and academic failure: Which comes first and what should be treated? *Journal of the American Academy of Child and Adolescent Psychiatry, 27*, 318-325.

McGee, R., Share, D. L., Moffitt, T. E., Williams, S., & Silva, P. A. (1988). Reading disability, behavior problems and juvenile delinquency. In D. H. Saklofske & S. B. G. Eysenck (Eds.), *Individual differences in children and adolescents: International perspectives* (pp. 158-172). London: Hodder & Stoughton.

McGee, R., Williams, S., & Silva, P.A. (1985). The factor structure and correlates of ratings of inattention, hyperactivity and antisocial behavior in a large sample of nine year old children from the general population. *Journal of Consulting and Clinical Psychology, 53*, 480-490.

McGee, R., Williams, S., & Silva, P. A. (1987). A comparison of boys and girls with teacher identified problems of inattention. *Journal of the American Academy of Child and Adolescent Psychiatry, 26*, 711-717.

McGee, R., Williams, S., & Silva, P. A. (1988). Slow starters and long-term backward readers: A replication and extension. *British Journal of Educational Psychology, 58*, 330-337.

McGee. R., Williams, S., Share, D. L, Anderson, J., & Silva, P. A. (1986). The relationship between specific reading retardation, general reading backwardness and behavioral problems in a large sample of Dunedin boys: A longitudinal study from five to eleven years. *Journal of Child Psychology and Psychiatry, 27*, 597-610.

McKinney, J. D. (1989). Longitudinal research on the behavioral characteristics of children with learning disabilities. *Journal of Learning Disabilities, 22*, 141-150.

McNeil, L. M. (1986). *Contradictions of control: School structure and school knowledge*. London: Routledge and Kegan Paul.

Merrell, K. W. (1990). Teacher ratings of hyperactivity and self-control in learning disabled boys: A comparison with low-achieving and average peers. *Psychology in the Schools, 27*, 289-296.

Metz, M. H. (1986). *Different by design: The context and character of three magnet schools*. London: Routledge and Kegan Paul.

Morgan, R. T. (1976). 'Paired Reading' tuition: A preliminary report on a technique for cases of reading deficit. *Child Care, Health and Development, 2*, 13-28.

Morgan, R., & Lyon, E. (1979). 'Paired Reading'–A preliminary report on a technique for parental tuition of reading-retarded children. *Journal of Child Psychology and Psychiatry, 20*, 151-160.

Moss, P. A. (1994). Can there be validity without reliability? *Educational Researcher, 23*(2), 5-12.

Mossenson, L., Hill, P., & Masters, G. (1987). *Tests of Reading Comprehension–TORCH: Manual*. Hawthorn, Vic: Australian Council for Educational Research.

Munck, M. E. (1979). *Model building in comparative education: Applications of the LISREL method to cross-national survey data*. International Association for the Evaluation of Educational Achievement Monograph Series No. 10. Stockholm: Almqvist & Wiksell International.

Murnane, R. (1975). *The impact of school resources on inner-city school children*. Cambridge, MA: Ballinger.

Murphy, J. (1990). *The educational reform movement of the 1980s*. Berkeley: McCutchan.

Newmann, F. M., & Archibald, D. A (1990). Organizational performance of schools. In Reyes, P. (Ed.), *Teachers and their workplace: Commitment, performance and productivity*. Newbury Park, CA: Sage.

Newman, F. M., Rutter, R. A., & Smith, M. S. (1989). Organizational factors affecting school sense of efficacy, community and expectations. *Sociology of Education, 64*, 221-238.

Nisbet, J. (1993). Introduction. In OECD, *Curriculum reform: Assessment in question*. Paris: OECD.

Nuttall, D. L., Goldstein, H., Prosser, R., & Rasbash, J. (1989). Differential school effectiveness. *International Journal of Educational Research, 13*(7), 769-776.

O'Connor, M. C. (1992). Rethinking aptitude, achievement and instruction: Cognitive science research and the framing of assessment policy. In B. R. Gifford, & M. C. O'Connor (Eds.), *Changing assessment: Alternative views of aptitude, achievement and instruction* (pp. 9-35). Boston: Kluwer Academic Publishers.

OECD (1989). *Schools and quality: An international report.* Paris: Author.

OECD (1993). *Curriculum reform: Assessment in question.* Paris: Author.

Otto, R. (1986). *Teachers under stress.* Melbourne: Hill of Content.

Peaker, G. F. (1967). The regression analyses of the national survey. In United Kingdom, Department of Education and Science, *Children and their primary schools* (Vol. 2, App. 4, pp. 179-221). London: HMSO.

Pinnell, G. S. (1989). Reading Recovery: Helping at-risk children learn to read. *Elementary School Journal, 90,* 161-182.

Pinnell, G. S., Lyons, C. A., DeFord, D. E., Bryk, A. S., & Seltzer, M. (1991). *Studying the effectiveness of early intervention approaches for first grade children having difficulty in reading.* Columbus: Martha L. King Language and Literacy Centre, Ohio State University.

Plowden Report (1967). *Children and their primary schools.* United Kingdom Department of Education and Science. London: HMSO.

Postlethwaite, N., & Ross, K. N. (1992). *Effective schools in reading: Implications for educational planners.* The Hague: The International Association for the Evaluation of Educational Achievement.

Prosser, R., Rasbash, J., & Goldstein, H. (1991). *ML3 - Software for three-level analysis.* Institute of Education, The University of London.

Prosser, R., Rasbash, J., & Goldstein, H. (1993). *ML3-E - Software for three-level analysis (Version 2.3).* Multilevel Models Project, Institute of Education, The University of London.

Purkey, S. C., & Smith, M. S. (1983). Effective schools: A review. *Elementary School Journal, 83*(4), 427-452.

Purves, A. C. (1973). *Literature education in ten countries: An empirical study.* New York: Wiley.

Quality of Education Review Committee, Report. (1985). *Quality of education in Australia.* Canberra: Australian Government Publishing Service.

Ralph, J. H., & Fennessey, J. (1983). Science or reform: Some questions about the effective schools models. *Phi Delta Kappan, 64*(10), 689-695.

Rasbash, J., Goldstein, H., & Woodhouse, G. (1995). *MLn - Software for n-level analysis (version 1).* Multilevel Models Project, Institute of Education, The University of London.

Raudenbush, S. W. (1989). The analysis of longitudinal, multilevel data. *International Journal of Educational Research, 13,* 721-740.

Raudenbush, S. W., & Bryk, A. S. (1986). A hierarchical model for studying school effects. *Sociology of Education, 59,* 1-17.

Raudenbush, S. W., & Bryk, A. S. (1988). Methodological advances in analyzing the effects of schools and classrooms on student learning. In E. Z. Rothkopf (Ed.), *Review of research in education 1988-1989,* Vol. 15 (pp. 423-475). Washington, DC: American Educational Research Association.

Raudenbush, S. W., & Willms, J. D. (Eds.) (1991). *Schools, classrooms and pupils: International studies of schooling from a multilevel perspective.* New York: Academic Press.

Report of the Inservice Teacher Education Project. (1988). *Teachers' learning: Improving Australian schools through inservice teacher training and development.* Canberra: Department of Employment, Education and Training.

Report of the Quality of Education Review Committee. (1985). *Quality of education in Australia.* Canberra, ACT: Australian Government Publishing Service.

Resnick, L. B., & Resnick, D. P. (1992). Assessing the thinking curriculum. In B. R. Gifford & M. C. O'Connor (Eds.), *Changing assessment: Alternative views of aptitude, achievement and instruction* (pp. 37-75). Boston: Kluwer Academic Publishers.

Reynolds, D. (Ed.) (1985). *Studying school effectiveness.* London: Falmer.

Reynolds, D., Hargreaves, A., & Blackstone, T. (1980). Review symposium of Rutter et al.'s Fifteen Thousand Hours. *British Journal of Sociology of Education, 1,* 207-219.

Reynolds, D., Creemers, B., & Peters, T. (Eds.) (1988). *School effectiveness and improvement: Proceedings of the first international congress.* Cardiff, Wales: School of Education, University of Wales.

Reynolds, D., Creemers, B. P .M., Nesselrodt, P. S., Schaffer, E. C., Stringfield, S., & Teddlie, C. (Eds.) (1994). *Advances in school effectiveness research and practice* (pp. 25-51). Oxford: Pergamon.

Reynolds, D., & Cuttance, P. (Eds.) (1992). *School effectiveness: Research, policy and practice.* London: Cassell.

Robins, L. N. (1991). Conduct disorders. *Journal of Child Psychology and Psychiatry, 32,* 193-212.

Robinson, W. S. (1950). Ecological correlations and the behavior of individuals. *American Sociological Review, 15,* 351-357.

Rogosa, D. R., & Willett, J. B. (1985). Understanding correlates of change by modelling individual differences in growth. *Psychometrika, 90,* 726-748.

Rosenholtz, S. J. (1985). Effective schools: Interpreting the evidence. *American Journal of Education, 94,* 352-358.

Rosenshine, B., & Furst, N. (1971). Research on teacher performance criteria. In B. O. Smith (Ed.), *Research in teacher education: A symposium.* Englewood Cliffs, NJ: Prentice-Hall.

Ross, K. N. (1988a). Sampling. In J. P. Keeves (Ed.), *Educational research, methodology, and measurement: An international handbook* (pp. 527-537). Oxford: Pergamon.

Ross, K. N. (1988b). Sampling errors. In J. P. Keeves (Ed.), *Educational research, methodology, and measurement: An international handbook* (pp. 537-541). Oxford: Pergamon.

Rowe, K. J. (1987). *An evaluation of the Early Literacy Inservice Course in Victorian schools: Summary report on behalf of the Victorian ELIC Steering Committee.* Melbourne, Vic: Research and Development, Curriculum Branch, Ministry of Education, Schools Division.

Rowe, K. J. (1989). The commensurability of the general linear model in the context of educational and psychosocial research. *Australian Journal of Education, 33,* 41-52.

Rowe, K. J. (1990a). *Issues in the application of linear models to the analysis of hierarchically structured educational performance data: A discussion and worked example.* Paper presented at the Fifth Australian Mathematical Psychology Conference, Department of Psychology, The University of Melbourne, 28-29 September, 1990.

Rowe, K. J. (1990b). *The impact of professional development on students' reading achievement: A multilevel and structural equation modelling approach.* Paper presented at the 1990 annual conference of the Australian Association for Research in Education, University of Sydney, NSW, Nov. 27 - Dec 2, 1990.

Rowe, K. J. (1990c). *The importance of reading at home: Research in Victorian education.* Melbourne, Vic: State Board of Education.

Rowe, K. J. (1991a). *Students, parents, teachers and schools make a difference: A summary report of major findings from the "100 Schools Project - Literacy Programs Study."* Melbourne: Vic: State Board of Education and School Programs Division, Ministry of Education and Training.

Rowe, K. J. (1991b). The influence of reading activity at home on students' attitudes towards reading, classroom attentiveness and reading achievement: An application of structural equation modeling. *British Journal of Educational Psychology, 61*(1), 19-35.

Rowe, K. J. (1992a). *Identifying Type I errors in educational and social research: Comparisons of results from fitting OLS and multilevel regression models to hierarchically structured data.* Paper presented at the Third National Social Research Conference, The University of Western Sydney, Hawkesbury, June 29 - July 2, 1992.

Rowe, K. J. (1992b). Research on reading: What makes a difference? *Education Quarterly, 6,* 33-34.

Rowe, K. J., & Griffin, P. E. (1988). *Literacy programs in Victorian schools: Proposal for a longitudinal study.* Melbourne, Vic: Ministry of Education, Schools Division.

Rowe, K. J., & Hill, P. W. (1994). *Multilevel modelling in school effectiveness research: How many levels?* Paper presented at the 7th International Congress for School Effectiveness and Improvement, The World Congress Centre, Melbourne, January 3 - 6, 1994.

Rowe, K. J., & Hill, P. W. (1995). Methodological issues in educational performance and school effectiveness research: A discussion with worked examples. *Australian Journal of Education* (in press).

Rowe, K. J., Hill, P. W., & Holmes-Smith, P. (1994). *The Victorian Quality Schools Project: A report on the first stage of a longitudinal study of school and teacher effectiveness.* Symposium paper presented at the 7th International Congress for School Effectiveness and Improvement, The World Congress Centre, Melbourne, January 3 - 6, 1994.

Rowe, K. J., Holmes-Smith, P. D., & Hill, P. W. (1993). *The link between school effectiveness research, policy and school improvement: Strategies and procedures that make a difference.* Paper presented at the 1993 Annual Conference of the Australian Association for Research in Education, Fremantle, W.A., November 22 - 25, 1993.

Rowe, K. J., & Rowe, K. S. (1989). *Assessing behavioral change: The development and psychometric properties of a parent and teacher administered child behavior inventory for use in educational and epidemiological research.* School Programs Division, Ministry of Education (Victoria), and Department of Pediatrics, The University of Melbourne.

Rowe, K. J., & Rowe, K. S. (1992a). The relationship between inattentiveness in the classroom and reading achievement (Part A): Methodological issues. *Journal of the American Academy of Child and Adolescent Psychiatry, 30*(6), 349-356.

Rowe, K. J., & Rowe, K. S. (1992b). The relationship between inattentiveness in the classroom and reading achievement (Part B): An explanatory study. *Journal of the American Academy of Child and Adolescent Psychiatry, 30*(6), 357-368.

Rowe, K. J., & Rowe, K. S. (1992c). Impact of antisocial, inattentive and restless behaviors on reading. In J. Elkins & J. Izzard. (Eds.), *Student behavior problems: Context initiatives and programs* (pp. 47-76). Hawthorn, Vic: The Australian Council for Educational Research.

Rowe, K. J., & Rowe, K. S. (1993). *Assessing student behavior: The utility and measurement properties of a simple parent and teacher administered behavioural rating instrument for use in educational and epidemiological research.* Paper presented at the 1993 Annual Conference of the Australian Association for Research in Education, Fremantle, W.A., 22 - 25 November, 1993.

Rowe, K. J., & Sykes, J. (1989). The impact of professional development on teachers' self-perceptions. *Teaching and Teacher Education, 5,* 129-141.

Rutter, M. (1983). School effects on pupil progress: Research findings and policy implications. In L. Shulman & G. Sykes (Eds.), *Handbook of teaching and policy* (pp. 3-41). New York: Longman.

Rutter, M. (1985). Family and school influences on behavioral development. *Journal of Child Psychology and Psychiatry, 26*, 349-368.

Rutter, M., Maughan, B., Mortimer, P., Ouston, J., & Smith, A. (1979). *Fifteen thousand hours: Secondary schools and their effects on children*. Somerset: Open Books.

Rutter, M., Tizard, J., & Whitmore, K. (1970). *Education health and behavior*. London: Longman.

Ryans, D. G. (1960). *Characteristics of teachers: their description, comparison, and appraisal: A research study*. Washington, DC: American Council on Education.

Sampson, O. C. (1966). Reading and adjustment: A review of the literature. *Educational Research, 8*, 184-190.

Scarborough, H. S., Dobrich, W., & Hager, M. (1991). Preschool literacy experience and later reading achievement. *Journal of Learning Disabilities, 24*(8), 508-511.

Scheerens, J. (1990). School effectiveness research and the development of process indicators of school functioning. *School Effectiveness and School Improvement, 1(1)*, 61-80.

Scheerens, J. (1992). *Effective schooling: Research, theory and practice*. London: Cassell.

Scheerens, J. (1993). Basic school effectiveness research: Items for a research agenda. *School Effectiveness and School Improvement, 4*(1), 17-36.

Scheerens, J., & Creemers, B. P. M. (1989). Conceptualizing school effectiveness. *International Journal of Educational Research, 13*(7), 691-706.

Schools Council. (1991). *Australia's teachers: An agenda for the next decade*. Canberra, ACT: Australian Government Printing Service.

Scott Long, J. (1983). *Covariance structure models: An introduction to LISREL*. Sage University Paper Series on Quantitative Applications in the Social Sciences, series no. 07-034. London: Sage.

Share, D. L., Jorm, A. F., Maclean, R., & Matthews, R. (1984). Sources of individual differences in reading acquisition. *Journal of Educational Psychology, 76*, 1309-1324.

Share, D. L., Jorm, A. F., Maclean, R., Matthews, R., & Waterman, B. (1983). Early reading achievement, oral language ability and a child's home background. *Australian Psychologist, 18*, 75-87.

Share, D. L., Jorm, A. F., Matthews, R., & Maclean, R. (1987). Parental involvement in reading progress. *Australian Psychologist, 22*, 43-51.

Shavelson, R. J. (Guest Editor) (1994). Performance assessment. *International Journal of Educational Research, 21*(3), 233-350.

Silver, L. B. (1990). Attention-deficit hyperactive disorder: Is it a learning disability or a related disorder? *Journal of Learning Disabilities, 23*, 394-397.

Sinclair, K. E. (1985). Students' affective characteristics and classroom behavior. In T. Husen & T. N. Postlethwaite (Eds.), *The international encyclopedia of education*, (Vol. 8, pp. 4881-4886). Oxford: Pergamon.

Slavin, R. E. (1993). *Success for All in the Philadelphia public schools: 1991-92 evaluation report*. Baltimore: Centre for Research on Effective Schooling for Disadvantaged Students, Johns Hopkins University.

Slavin, R. E. (1994). Quality, appropriateness, incentive, and time: A model of instructional effectiveness. *International Journal of Educational Research, 21*(2), 141-157.

Slavin, R. E., Karweit, N. L., Wasik, B. A., & Madden, N. A. (Eds.) (1994). *Preventing early school failure: Research on effective strategies*. Boston: Allyn & Bacon.

Slavin, R. E., Madden, N. A., Dolan, L. J., Wasik, B. A., Ross, S. M., & Smith, L. J. (1994a). *Success for All: Longitudinal effects of systematic school by-school reform in seven districts*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, April, 1994.

Slavin, R. E., Madden, N. A., Dolan, L. J., Wasik, B. A., Ross, S. M., & Smith, L. J. (1994b). 'Whenever and wherever we choose': The replication of 'Success for All'. *Phi Delta Kappan, 75*(8), 639-647.

Smith, B. O. (Ed.) (1971). *Research in teacher education: A symposium.* Englewood Cliffs, NJ: Prentice-Hall.

Smylie, M. A. (1988). The enhancement function of staff development: Organizational and psychological antecedents of individual teacher change. *American Educational Research Journal, 25*(1), 1-30.

Spiegel, D. L. (1981). *Reading for pleasure: Guidelines.* Newark, DL: International Reading Association.

Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 21*, 361-407.

Stanton, W. R., Feehan, M., McGee, R., & Silva, P. A. (1990). The relative value of reading ability and IQ as predictors of teacher reported behavior problems. *Journal of Learning Disabilities, 23*, 514-517.

Steedman, J. (1983). *Progress in secondary schools.* London: National Children's Bureau.

Stevenson, J., Richman, N., & Graham, P. (1985). Behavior problems and language abilities at three years and behavioral deviance at eight years. *Journal of Child Psychology and Psychiatry, 26*, 215-230.

Stipek, D., & Weisz, J. (1981). Perceived personal control and academic achievement. *Review of Educational Research, 52*, 101-137.

Sutton, R. E. (1987). Teacher education and educational self-direction: A conceptual analysis and empirical investigation. *Teaching and Teacher Education, 3*(2), 121-133.

Taylor, C. (1994). Assessment for measurement or standards: The peril and promise of large-scale assessment reform. *American Educational Research Journal, 31*, 231-262.

Thompson, W. W. (1985). Environmental effects on educational performance. *The Alberta Journal of Educational Research, 31*, 11-25.

Tizard, J, Schofield, W., & Hewison, J. (1982). Collaboration between teachers and parents in assisting children's reading. *British Journal of Educational Psychology, 52*, 1-15.

Tomlinson, T. M. (1980). *Student ability, student background and student achievement: Another look at life in effective schools.* Paper presented at Educational Testing Service Conference on Effective Schools, New York, May 27 - 29, 1980.

Topping, K. J. (1986). *Paired reading training pack* (2nd ed.). Huddersfield, UK: Kirklees Psychological Service.

Topping, K., & McKnight, G (1984). Paired reading—and parent power. *Special Education—Forward Trends, 11*, 12-15.

Topping, K., & Wolfendale, S. (Eds.) (1985). *Parental involvement in children's reading.* Beckenham, UK: Croom Helm.

Torneus, M. (1984). Phonological awareness and reading: A chicken and egg problem? *Journal of Educational Psychology, 70*, 1346-1358.

Tukey, J. W. (1977). *Exploratory data analysis.* Reading, MA: Addison-Wesley.

Tunmer, W. E, & Nesdale, A. R. (1985). Phonemic segmentation skill and beginning reading. *Journal of Educational Psychology, 77*, 417-427.

Turner, R. (1987). *SHARE Project—Doveton Cluster: A case study.* Melbourne: Ministry of Education, Victoria, School Improvement Plan.

Victoria (1989). *Reading together: A major initiative for literacy Prep-Year 3 from the Ministry of Education.* Melbourne: Jean Gordon Government Printer.

Victoria (1991). *English profiles handbook: Assessing and reporting students' progress in English.* Melbourne, Vic: School Programs Division, Ministry of Education and Training.

Walberg, H. (1986). What works in a nation still at risk. *Educational Leadership, 4*, 7-11.

Walberg, H. J., & Tsai, S. (1985). Correlates of reading achievement and attitude: A national assessment study. *Journal of Educational Research, 78*, 159-167.

Wasik, B. A., & Slavin, R. E. (1993). Preventing early reading failure with one-to-one tutoring: A review of five programs. *Reading Research Quarterly, 28*, 178-200.

Wareing, L. (1985). A comparative study of three methods of parental involvement in reading. In K. Topping & S. Wolfendale (Eds.), *Parental involvement in children's reading* (Ch. 26). Beckenham: Croom Helm.

Wearing, A. (1989). *Teacher stress in Victoria: A survey of teachers' views—summary and recommendations.* Applied Psychology Research Group, Department of Psychology, The University of Melbourne. Melbourne: Ministry of Education, Victoria.

Webb, M., Webb, T., & Eccles, G. (1985). Parental participation in the teaching of reading. *Remedial Education, 20*, 86-91.

Weiner, B. (1984). Principles for a theory of student motivation and their application within an attributional framework. In R. E. Ames & C. Ames (Eds.), *Research on motivation in education* (Vol. 1, pp. 15-38). Orlando: Academic Press.

Wells, G. (1985). *Language development in the preschool years.* Cambridge, England: Cambridge University Press.

Wells, G. (1986). Preschool literacy-related activities and success in school. In D. Olson, A. Hildyard, & N. Torrance (Eds.), *Literacy, language and learning* (pp. 229-255). Cambridge, England: Cambridge University Press.

Werts, C. E., Rock, D. R., Linn, R. L., & Jöreskog, K. G. (1978). A general method for estimating the reliability of a composite. *Educational and Psychological Measurement, 38*, 933-938.

Wheeler, H. G. (1986). *Central Victorian field trials of Reading Recovery in 1984.* Bendigo, Vic: Bendigo College of Advanced Education.

Wigdor, A. K., & Garner, W. R. (Eds.) (1982). *Ability testing: Uses consequences and controversies.* Washington, DC: Academy Press.

Wiggins, G. (1989, April). Teaching to the (authentic) test. *Educational Leadership*, 41-47.

Willett, J. B. (1988). Questions and answers in the measurement of change. *Review of Research in Education - 1988* (pp. 345-422). Washington: American Educational Research Association.

Williams, J. (1984). Phonemic analysis and how it relates to reading. *Journal of Learning Disabilities, 17*, 240-245.

Williams, S. M., & Silva, P. A. (1985). Some factors associated with reading ability: A longitudinal study. *Educational Research, 27*, 159-168.

Williams, T., & Carpenter, P. G. (1990). Private schooling and public achievement. *Australian Journal of Education, 34*, 3-24.

Williams, T., & Carpenter, P. G. (1991). Private schooling and public achievement in Australia. *International Journal of Educational Research, 15*(5), 411-431.

Winter, S. (1988). Paired reading: A study of process and outcome. *Educational Psychology, 8*, 135-151.

Wyatt, T. & Ruby, A. (Eds.) (1989). *Education indicators for quality, accountability and better practice.* Sydney: Australian Conference of Directors-General of Education.

READING RECOVERY: UNA VISIÓN GENERAL[1]

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READING RECOVERY ES UN PROGRAMA DE INTERVENCIÓN TEMPRANA diseñado por Marie M. Clay (1979, 1985) para ayudar a niños de primer año que están teniendo dificultades para aprender a leer y escribir. Los niños que ingresarán al programa son identificados por sus maestras como los de menor aprovechamiento en la adquisición de la lecto-escitura. Los niños que no están desarrollando la lectura y escritura con la enseñanza normal, reciben un programa de instrucción de corta duración diseñado individualmente, que les permite tener éxito antes de entrar a un ciclo de fracasos. Reading Recovery está diseñado para llevar a los niños, en un corto tiempo, del rango inferior de su grupo, al promedio, donde se pueden beneficiar de la enseñanza normal del salón de clases. El objectivo de Reading Recovery es lograr un aprendizaje acelerado. Se espera que los niños tengan un progreso más rápido que el promedio, de modo que puedan alcanzar a los otros niños de su grupo.

El Programa Reading Recovery proporciona una tutoría uno-a-uno cinco días a la semana, 30 minutos al día, de parte de una maestra especialmente capacitada. Las lecciones diarias durante estas sesiones de 30 minutos consisten en una variedad de experiencias de lectura y escritura, diseñadas para auxiliar a los niños a desarrollar sus propias estrategias efectivas para la adquisición de la lecto-escritura. La instrucción continúa hasta que los niños pueden leer al nivel o por encima del promedio de su grupo, y pueden continuar aprendiendo sin ayuda remedial posterior. Reading Recovery complementa la enseñanza normal del salón de clases, y dura un promedio de 12-20 semanas, al término de las cuales los niños habrán desarrollado un sistema auto-expandible que le permite usar una variedad de estrategias para leer textos cada vez más difíciles, y para poder escribir sus propios mensajes de manera independiente.

La Lección Reading Recovery

El Programa Reading Recovery usa diálogos de apoyo entre maestra y niño como la base principal de la enseñanza. Se ha encontrado que esta conversación maestra-niño es un método efectivo para que los expertos (maestras) ayuden a los principiantes (alumnos) a enfrentarse a tareas complejas (como leer) (Cazden, 1988; Kelly, Klein, & Pinnell, 1994), y es una necesidad particular de los niños que tienen dificultades en la escuela (Clay & Cazden, 1990). La lección Reading Recovery sigue un patrón sistemático de actividades diseñadas individualmente sobre la base de un análisis diario del progreso del niño que hace la maestra. Cada lección tiene siete componentes distintos:

1. El niño relee varios libros familiares. Estos cuentos provienen de una variedad de editoriales y representan un amplio rango de textos narrativos y expositivos con diversos niveles de dificultad.
2. El niño relee un libro presentado en la lección anterior, mientras la maestra observa y registra la conducta de leer del niño.
3. El niño identifica letras y aprende cómo trabajan las palabras.
4. El niño escribe una historia y la maestra proporciona oportunidades para que el niño escuche y registre los sonidos de las palabras.
5. El niño reordena su historia a partir de la oración escrita por él y recortada por la maestra.
6. La maestra introduce un nuevo libro cuidadosamente seleccionado por sus oportunidades de aprendizaje.
7. El niño lee el libro nuevo organizando sus actuales estrategias de solución de problemas.

Capacitación de Maestras

El Programa Reading Recovery usa un modelo de *capacitador de capacitadores*. Las profesoras universitarias (formadoras de instructoras de maestras) preparan instructoras de maestras (expertas en desarrollo de personal) a nivel del distrito escolar o del condado, las cuales a sus vez capacitan a maestras en las técnicas de enseñanza de Reading Recovery. Este modelo asegura que Reading Recovery tendrá, a nivel de los distritos escolares y los centros de implementación, el apoyo necesario para una aplicación exitosa del programa. También proporciona el contexto para una reforma sistemática de cómo enseñamos a leer y escribir, y de cómo proporcionamos una buena enseñanza inicial a todos los niños.

Se proporciona un programa anual de desarrollo profesional a maestras experimentadas. Este programa integra teoría y práctica, y se caracteriza por una interacción intensa entre colegas. Las maestras-en-capacitación llevan a cabo lecciones detrás de un vidrio de doble visión, y son observadas y retroalimentadas por sus colegas. Además, las instructoras de maestras de Reading Recovery visitan a las maestras en sus centros y les ayudan a reflexionar y a mejorar su enseñanza y observación de los niños. Hay tres elementos principales en el programa de desarrollo profesional de Reading Recovery:

1. Las maestras y las instructoras de maestras participan en un amplio programa de capacitación que combina teoría sobre desarrollo infantil y alfabetización temprana, con la práctica en la observación y discusión de lecciones Reading Recovery que son enseñadas detrás de un vidrio de doble visión.
2. Las maestras y las instructoras de maestras trabajan con cuatro niños en el Programa Reading Recovery todos los días durante su año de capacitación y posterioremente. Las maestras son observadas y asesoradas por las instructoras de maestras durante visitas a sus escuelas.
3. Las maestras y las instructoras de maestras participan de un permanente desarrollo profesional mientras continúan enseñando en el Programa Reading Recovery. Las maestras son visitadas y asesoradas, y participan en sesiones de capacitación en las que se observan y se critican demostraciones usando el vidrio de doble visión.

Terminología

Mucho de la investigación sobre el Programa Reading Recovery utiliza varios términos que necesitan una mayor claridad y definición:

El Instrumento de Observación del Desarrollo de la Lecto-Escritura (Clay, 1979, 1985) contiene seis índices del esfuerzo del niño al realizar tareas de lectura y escritura, y proporciona información acerca de lo que el niño sabe y puede controlar respecto de su propio aprendizaje. Los componentes del inventario son:

1. *Identificación de Letras* - una lista de 61 caracteres diferentes, incluyendo letras mayúsculas y minúsculas, así como las formas impresas de *a* y *g*.
2. *Prueba de Palabras* - una lista de las 20 palabras usadas que son frecuentemente en los materiales de lectura inicial.
3. *Concepto Acerca del Texto* - una variedad de tareas relacionadas con la lectura de libros y familiarización con los mismos.
4. *Vocabulario Escrito* - se les dá la oportunidad a los niños que escriban en diez minutos todas las palabras que conocen.
5. *Prueba de Dictado* - se le lee una oración al niño, quien escribe las palabras usando el análisis de los sonidos.
6. *Lectura del Texto* - se determina el nivel de lectura con base en la lectura de libros organizados por un gradiente de dificultad.

Explorando lo conocido se refiere a las primeras dos semanas del programa del niño, en las cuales la maestra explora la información que posee el niño, establece una relación de trabajo, apoya la confianza del niño, y comparte algunas oportunidades de lectura y escritura.

Los *Registros Contínuos* constituyen un sistema de notación de las observaciones de la maestra sobre el procesamiento que el niño hace de un texto nuevo.

La *Descontinuación* se refiere a la decisión de la maestra de sacar a un niño del programa sobre la base de los resultados de una reaplicación del Inventario Observacional, en base a las estrategias usadas por el niño durante la lectura y escritura, y de que el niño haya alcanzado, al menos, el desempeño promedio de su grupo en primer grado.

Los *niños del Programa* son aquéllos que reciben sesenta o más lecciones, o que fueron exitosamente descontinuados del programa antes de haber completado sesenta lecciones.

El *Contacto Contínuo* se refiere a la capacitación en funciones que se proporciona después del año inicial de capacitación.

Investigación sobre Reading Recovery

Reading Recovery presenta un riguroso diseño de investigación que monitorea continuamente los resultados del programa, y proporciona apoyo a las maestras e instituciones participantes. Se recopilan datos de todos los estudiantes que participan en el programa. Los hallazgos de estos estudios incluyen:

1. Aproximadamente 75-85% del 20% de niños con desempeño inferior atendidos por Reading Recovery alcanzan calificaciones de lectura y escritura en el rango promedio de su clase, y no reciben instrucción complementaria adicional (Pinnell, DeFord, & Lyons, 1988; National Diffusion Network, 1993; Swartz, Shook, & Hoffman, 1993).
2. El progreso desarrollado por los niños de Reading Recovery en la lectura y escritura se mantiene, y su desempeño en la banda promedio ha sido confirmado hasta tres años después de que los niños fueron descontinuados del programa (Pinnell, 1989; Smith-Burke, Jaggar, & Ashdown, 1993).
3. Diversos estudios han mostrado que Reading Recovery es más efectivo en alcanzar un progreso de corto plazo y sostenido en la lectura y escritura, que otros programas de intervención que usan tanto métodos tutoriales uno-a-uno, como métodos de grupos pequeños (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994; Gregory, Earl, & O'Donoghue, 1993).
4. Se ha encontrado que Reading Recovery es eficiente financieramente cuando se le compara con programas de lectura remedial, servicios de educación especial, y la retención o reprobación en los primeros años (Dyer, 1992; Swartz, 1992).

Reflexión Personal

Reading Recovery tiene un número de elementos clave que, creemos nosotros, hacen del programa una oportunidad importante para modificar la forma como enseñamos a los niños pequeños a leer y escribir. Los proporcionamos de una manera resumida.

1. Reading Recovery es un programa de intervención temprana que apoya el aprendizaje temprano de la lecto-escritura. Reading Recovery se concentra en una intervención temprana, cuyos beneficios han sido subestimados por años. Gastar dinero antes de que los problemas comienzen en lugar de hacerlo más tarde, en programas remediales, o aún en encarcelar criminales, es algo de lo que se ha hablado, pero que no se ha visto que se haga en las escuelas públicas. Reading Recovery está diseñado para focalizar los recursos en los niños de los primeros años, mientras comienzan a leer.

Reading Recovery también fomenta un aprendizaje acelerado. La mayoría de nuestros programas remediales se consideran exitosos inclusive cuando se presenta algún progreso. Desafortunadamente, los niños que solamente presentan algún progreso estarán siempre atrás de su grupo. Solamente un aprendizaje acelerado puede ayudar a un niño a que alcance el promedio de sus compañeros y a permitirle que participe en el programa regular de su salón de clases.

2. Reading Recovery atiende a los niños con menor aprovechamiento. Todos los niños con menor aprovechamiento en primer año, sin excepción alguna, son seleccionados para participar en el programa. Ninguna de las razones que históricamente se han usado para explicar la falta de un desempeño adecuado (e.g., canalización probable hacia educación especial, falta de apoyo por parte de los padres) se utiliza para excluir a niños del programa.

3. Reading Recovery es un programa efectivo con poblaciones diversas. Los datos recopilados sobre el éxito del programa en regiones geográficamente diferentes (a lo largo de los Estados Unidos, Australia, Canadá, el Reino Unido y Nueva Zelanda) y en diversos grupos de niños (aquellos con diferencias étnicas, lingüísticas o económicas) son comparables. Los datos preliminares del programa más recientemente desarrollado de Descubriendo La Lectura/ Reading Recovery en Español, son también semejantes a lo que se ha encontrado con niños participantes en el programa en Inglés.

4. Los niños desarrollan un sistema auto-expandible para el aprendizaje de la lecto-escritura. Los niños aprenden las habilidades para tener un aprendizaje autónomo que solamente necesita el apoyo de la enseñanza regular del salón de clases, en lugar de los programas remediales.

5. Los logros de los estudiantes se mantienen a lo largo del tiempo. La investigación con estudiantes después de que han terminado el programa ha demostrado un crecimiento sostenido en la lectura y la escritura, sin necesidad de un apoyo contínuo de Reading Recovery o de otras intervenciones específicas.

6. Las maestras del programa Reading Recovery trabajan con niños como parte de su capacitación. Las maestras del programa aprenden haciendo, y usan el marco de referencia de la lección Reading Recovery a lo largo de su año de capacitación. Los niños que son atendidos por estas maestras en capacitación muestran progresos comparables a aquellos niños atendidos por maestras más experimentadas.

7. El programa Reading Recovery proporciona un apoyo profesional contínuo para sus maestras. El contacto contínuo para las maestras capacitadas se proporciona en tanto la maestra participe en el programa Reading Recovery. A diferencia de otros programas de capacitación para maestras que tienen poco contacto con las estudiantes después del período de capacitación, Reading Recovery presenta oportunidades en-servicio permanentes diseñadas para mantener la efectividad de la enseñanza.

8. Todas las maestras Reading Recovery, personal capacitador, y profesores universitarios trabajan diariamente con niños. Esta enseñanza contínua de niños por parte del personal a todos los niveles, es la práctica a la que se le acredita el mantenimiento de la efectividad de la capacitación. Las profesoras pueden relacionar la capacitación en el salón universitario, a un evento reciente en lugar de a algo del pasado distante. Este aspecto novedoso de Reading Recovery merece ser atendido seriamente por otros capacitadores de maestras.

9. El éxito del programa está directamente asociado al desempeño del estudiante y, consecuentemente, el éxito como maestra en el programa Reading Recovery está relacionado con los resultados del estudiante. Las maestras son responsables, y tienen que dar cuenta, del progreso en la lectura y escritura hecho por lo niños que están en el programa.

10. El programa Reading Recovery es eficiente financieramente. Aunque Reading Recovery es un programa complementario, se mantiene efectivo en relación a su costo por su naturaleza de corto tiempo. Programas comparablels (e.g., Capítulo 1, educación especial) son mucho más costosos porque son, típicamente, de largo plazo. Se ha encontrado que Reading Recovery es menos costoso y más efectivo. Los administradores de escuelas públicas todavían expresan preocupaciones acerca del gasto que representa Reading Recovery. La mejor respuesta es que el problema es uno difícil, y que la solución sera igualmente difícil. Los educadores han buscado

en vano respuestas baratas y fáciles por muchos años. Un programa menos costoso que atienda a más niños pero con resultados limitados (o que ni siquiera intente medir los resultados) no es ninguna ganga.

11. Reading Recovery es un programa no-lucrativo. A diferencia de muchos otros programas que se ofrecen a las escuelas públicas, Reading Recovery no reclama una comisión por derechos de autor, no vende materiales, y no produce ganancias. El nombre de Reading Recovery está registrado solamente para proteger la integridad del programa. La naturaleza no-lucrativa del programa nos permite promoverlo sin ninguna restricción.

Aquellos de nosotros que estamos involucrados en el programa Reading Recovery lo hacemos porque su éxito con los niños ha sido demostrado sistemáticamente. Reading Recovery es una perspectiva del sistema educativo en la que el niño tiene prioridad sobre todo lo demás. Como tal, la fuerza de sus resultados con los niños, tanto a corto como a largo plazo, y su componente de desarrollo profesional de las maestras, proporcionan direcciones en las que mucho se necesita una reforma. A aquellos verdaderamente interesados en una reforma escolar genuina que proporcione una buena enseñanza inicial a todos los niños, se les recomienda que revisen y consideren cuidadosamente el programa Reading Recovery.

Referencias

Cazden, C. B. (1988). *Classroom discourse: The language of teaching and learning.* Portsmouth, NH: Heinemann.

Clay, M. M. (1979; 1985). *The early detection of reading difficulties.* Auckland, NZ: Heinemann.

Clay, M. M., & Cazden, C. B. (1990). A Vygotskian interpretation of Reading Recovery tutoring. In L. Moll (Ed.), *Vygotsky and education: Instructional implications and applications of sociohistorical psychology* (pp. 206-222). Cambridge, UK: Cambridge University Press.

Dyer, P. C. (1992). Reading Recovery: A cost-effectiveness and educational outcomes analysis. *Spectrum: Journal of Research in Education, 10*(1), 110-119.

Gregory, D., Earl, L., & O'Donoghue, M. (1993). A study of Reading Recovery in Scarborough: 1990-1992. *Annual site report of the Scarborough School District.* Ontario: Scarborough School District.

Kelly, P. E., Klein, A. F., & Pinnell, G. S. (1994). Reading Recovery: Teaching through conversation. In D. F. Lancy (Ed.), *Children's emergent literacy.* Westport, CT: Praeger.

National Diffusion Network (1993). *1992-93 discontinuation data* (Research rep.). Columbus: Reading Recovery National Data Evaluation Center.

Pinnell, G. S. (1989). Reading Recovery: Helping at-risk children learn to read. *The Elementary School Journal, 90*(2), 159-181.

Pinnell, G. S., DeFord, D. E., & Lyons, C. A. (1988). *Reading Recovery: Early intervention for at-risk first graders.* Arlington, VA: Educational Research Service.

Pinnell, G. S., Lyons, C. A., DeFord, D. E., Bryk, A. S., & Seltzer, M. (1994). Comparing instructional models for the literacy education of high-risk first graders. *Reading Research Quarterly, 29*(1), 9-38.

Smith-Burke, M. T., Jaggar, A., & Ashdown, J. (1993). *New York University Reading Recovery project: 1992 follow-up study of second graders* (Research rep.). New York: New York University.

Swartz, S. L. (1992). *Cost comparison of selected intervention programs in California.* San Bernardino: California State University.

Swartz, S. L., Shook, R. E., & Hoffman, B. M. (1993). *Reading Recovery in California, 1992-93 site report.* San Bernardino: California State University.

ERRATA

The following was inadvertently omitted from the article, Reading Recovery in New Zealand: A Report from the Office of Her Majesty's Chief Inspector of Schools, that was reprinted in Literacy, Teaching and Learning: An International Journal of Early Literacy, Volume 1, Number 1, 1994, pages 143-162. Our apologies for any inconvenience this error may have caused.

Training for the Teaching of Initial Reading: Auckland College of Education

44. As the headquarters organisation of Reading Recovery is housed in Auckland College of Education, HMI had the opportunity to learn something about the provisions made for teacher training for early years reading in one of New Zealand's leading training institutions. It should be stressed that what follows is selective and was gleaned from conversation with the college staff and the documents they provided. It is not the result of a detailed study, but has been included for the bearing it has on the contextual issues for which we were asked to have regard. As the field notes show, HMI formed a clear impression of the place given to literacy in the New Zealand initial training system:

> "The very strong emphasis on the teaching of reading reflects the emphasis placed on literacy in New Zealand. There is no doubt that recently and currently trained primary teachers (5-13) are well prepared to teach reading in the normal classroom. **The Reading Recovery programme builds on a very thorough approach to teaching reading."**

45. The Auckland course is intended to produce general class teachers who also have a measure of specialist expertise in up to two curricular areas. All students must study all nine areas of the curriculum—a minimum of 40 contact and 10 hours private study (PS) on each—and specialise in up to two.

In the first two years 200 hours are allocated to English including reading; thereafter option courses are available for the more specialised study of reading and language issues.

Compulsory courses for all primary teachers at Auckland College comprise:

Year 1 i **Introduction to language teaching** (40 hours contact plus 10 private study)
ii **Language teaching in the primary schools** (40 hours plus 10 PS)

Year 2 i **Introduction to reading** (40 hours plus 10 PS)
This introduces key ideas and approaches in the teaching of reading in New Zealand schools. The course is both college and school-based and is taught by the Reading Studies department. As elements are taught in college, so their practice can be rehearsed in school eg the use of the running record that is followed by immediate (same week) application in school. Different elements are taught and practised over a concentrated 10 week period.

ii **Reading in the primary school** (40 hours plus 10 PS)
The course extends and develops the knowledge, skills and approaches used in the teaching of reading and is again taught by the Reading Studies department in conjunction with the practice schools.

46. Part of the training of every New Zealand primary school teacher includes the use of the wide range of assessment instruments and observations employed in the Diagnostic Survey given to every New Zealand child after one year of schooling. Broadly, this means that most New Zealand teachers are trained in the use of the running record. And, in part, it was owing to such widespread teacher familiarity with this instrument that Reading Recovery arose in the first instance. Teachers found that they were identifying a core of children to whom they could offer little effective help within the confines of existing provision. At in-service courses these were bought to the attention of Professor Clay who was asked to assist.

47. In summary, reading, as part of language tuition, is both an integral and an explicit part of the two first-year English course and is the focus of the two second-year English courses. Students may also study option courses in both the second and third year; those specialising in reading/English will also take more advanced papers. There are six additional Year 2 English options, including two with a major reading focus targeted on work with either younger or older primary pupils; and 10 Year 3 options, several of which have major elements on reading.

48. This emphasis on initial reading for all primary school teachers substantially exceeds the Secretary of State's minimum requirements for the time to be devoted to English in primary phase initial teacher training courses in England. The 200 hours achieved in the first two years in Auckland surpass those criteria, which are for a complete course, by a factor of two.

49. HMI's visit was neither long enough nor sufficiently representative, nor was the team large enough, to embark on a fully reliable comparative survey of reading standards and practices between England and New Zealand. Nonetheless, a number of clear professional impressions emerged: **literacy is accorded the supremely important place in the New Zealand education system.** This showed up in the space and time given to it in the daily routines of all the primary schools visited by HMI and in initial teacher training. It was also apparent in the resources devoted to it by government (the free issues of the *Ready to read* series, and the regular issue of the *School Journal*—attractively presented collections of reading materials, some written by pupils—to all maintained schools). Similarly, many bodies of school trustees showed that the same sense of importance was at work both in the funds they had to dispose and in the spending priorities they clearly accorded to book purchase. Moreover, the curriculum itself carries fewer competing elements and enables teachers to concentrate far more on securing a very sound foundation of literacy in the early years. The classroom organisation of reading was generally more coherent and efficient than would normally be found in a sample of similar kind and size over a similar period of time in England.

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Rationale

This journal has been developed to provide a forum for communication among members of the Reading Recovery Council of North America and with professionals from a wide variety of disciplines. The journal has an international focus which encourages contributions by individuals with similar interests and research agendas working throughout the world. It is believed that this multidisciplinary and global perspective can make a positive contribution to the research literature. The Reading Recovery Council of North America, serving children in Canada and the United States, hopes to promote the continued engagement of those who work in Reading Recovery with their colleagues in related fields. The journal is a vehicle of communication that will disseminate difficult to obtain research and commentary, establish a network of individuals doing parallel research, and serve as a forum for ongoing discussion of issues related to literacy, teaching, and learning.

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